American Aviation

The Air Industry's Pioneer Independent Magazine — **Sept. 15, 1949**

RYCLEWES 15 SEP 1949 ARMY LIBRARY SERIAL RECORD

Dreams and Hopes

IT WAS UNLIKELY indeed that a meeting of twelve men at The Hague in The Netherlands on that warm twenty-fifth day of August, 1919, occasioned much attention from the press of Europe. Certainly this little gathering passed unnoticed in a self-satisfied United States that was quickly forgetting about its first war in Europe and which definitely was not interested in airplanes except as surplus novelties that had had some kind of undefined use in a war.

by W. W. P.

Yet these twelve men from six European countries had dreams and hopes that the airplane would some day be important in the carriage of men and mails and goods. They had sufficient vision and faith in the airplane's future, in fact, that they gathered together to organize an international air traffic association.

There must have been considerable scoffing at the group in those days because these twelve men represented only six companies and just two of those companies owned airplanes and had actually started flying on a couple of short routes. The other four companies were still in the planning stage. But driven by vision and faith, these men from Britain, Germany, Denmark, Norway, Sweden and Holland sat down around a table and drew up a traffic code which was to become an historical document of uniform practices for air transportation.

Lest we in the United States forget that we are not the real pioneers of commercial air transportation, remember that this first IATA meeting took place 0 years ago and that it wasn't until 1926, seven years later, that commercial aviation began writing its pages of history in this country. It is well to remember, in fact, that it wasn't until 1945 that the U. S. became a real participant in the affairs of what is now called the International Air Transport Associ-

It is fitting that the 30th annual assembly of IATA should be held this month (Sept. 12-16) in The Hague where it was founded. And doubly fitting that the host to the world airlines should be KLM Royal Dutch Airlines, also celebrating its 30th anniversary. And that the president as well as host should be Dr. Albert Plesman, president of KLM, who has long been [illegible] world [illegible] port.

(Turn to Page 8)

REFERENCE COPY

NAL's Vice President-Sales

Walter Sternberg, veteran of 18 years in air transportation, assumed new duties as vice president-sales for National Airlines on September 6. He had recently resigned as assistant v.-p.-sales for American Airlines. Sternberg is thoroughly familiar with National's sales area, having served as general traffic manager for Eastern Air Lines before joining American three years ago.

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OTHER AMERICAN AVIATION PUBLICATIONS

AMERICAN AVIATION DAILY — OFFICIAL AIRLINE GUIDE — AMERICAN AVIATION DIRECTORY

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accomplished fo... period of the last four or five...

It is with great pleasure that I can write this letter... the performance of Pacific Overseas Airlines has been most exceptional with regard to man hour estimates, price and time required to complete any work we have sent them.

Pacific Overseas accomplished two complete fire prevention installations on our DC-4's. Their estimate in man hours was practically 50 per cent under any other maintenance corporations and they held to within 2 per cent of the required man hours to comolete the job. However, the most amazing and outstanding feature was their performance in accomplishing the work. Their estimate was sixteen (16) working days in comparison to from thirty (30) to forty-five (45) working days by any other maintenance corporation and both of these airplanes were completed on the sixteenth day.

During the month of April POA accomplished an 8000 hour check plus a complete tank resealing job on one of our DC-4's. Again I may state that their performance was exceptional. A very outstanding item is called to my attention. Pacific Overseas Airlines estimated that the man hours required to accomplish unpredictable items to complete the 8000 hour check would be 1000 man hours. When the final invoice was presented to us the man hour figure was 1087 man hours for unpredictables.

Again I may state that POA was considerably lower in their estimate of man hours than any other maintenance corporation and upon completion they were within 3 1/3 per cent of the entire estimated man hours to complete the job. The other maintenance corporations that bid on this particular job required from thirty (30) to sixty (60) days. The airplane was delivered to POA on April 1, 1949, and we flew the airplane away from Ontario on April 22, 1949.

These are actual performance figures and as one can readily see, these performance figures are exceptional and, in all cases, Trans Caribbean has been very well pleased with the work accomplished by Pacific Overseas Airlines.

TRANS CARIBBEAN AIRWAYS

ALLEN E. BUCHANAN
Director of Operations

AEB:jar

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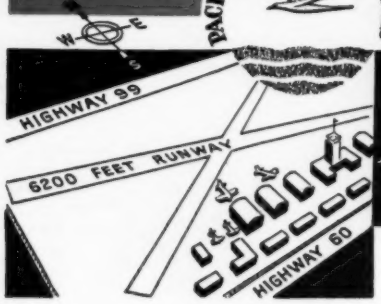

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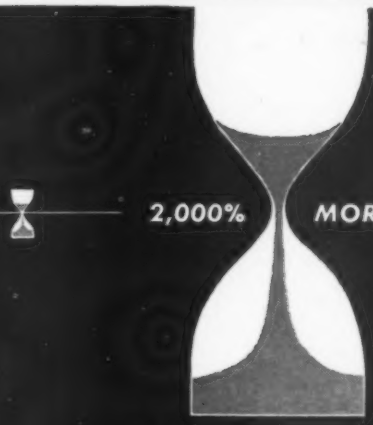

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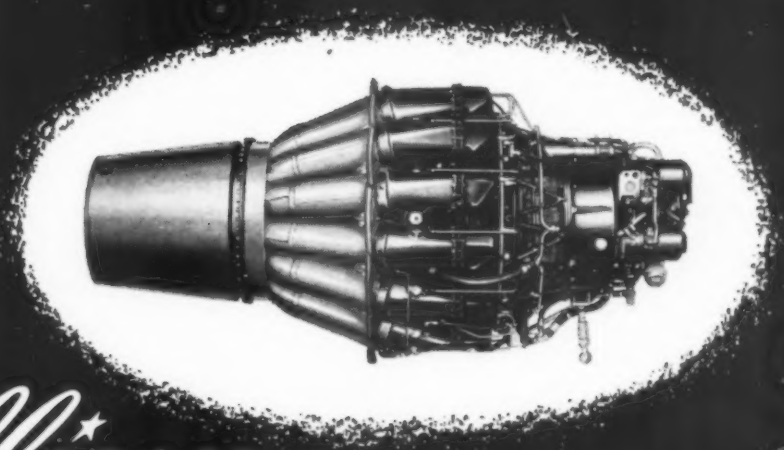

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North American FJ-1 Fury
Lockheed F-94
Consolidated XP5Y
Northrop RB-35B Flying Wing
Martin P4M-1 Mercator
North American AJ-1

News in Brief

Two more certificated feederlines were planning to inaugurate service in mid-September. **Central Airlines,** based at Oklahoma City, was to begin service with Beech Bonanzas on September 15 over one route segment between Dallas-Fort Worth and Oklahoma City, via Gainesville, Ardmore, Ada, Holdenville, and Shawnee. **E. W. Wiggins Airways** was planning to begin its certificated operation on September 19 between Albany and Boston using twin-engined Cessnas. Stops will be made at Worcester, Springfield, and Pittsfield. Two weeks later, Wiggins is to activate the Springfield-Boston segment, with stops at Hartford, Providence, and Brockton.

U. S. Airlines, all-cargo carrier recently approved by CAB for north-south certificated operations, intends to begin service about October 1 to 48 cities, including Boston, New York, Miami, New Orleans, and Chicago.

The new Douglas Super DC-3 was first demonstrated to an airline over the Labor Day weekend when it was shown to officials of Compania Mexicana de Aviacion in Mexico City. Douglas decided to make the Mexican capital the first stop on a scheduled 10,000-mile demonstration tour to tie it in with CMA's 25th anniversary. The craft was later to be demonstrated to Pioneer Air Lines. Points on the itinerary include Dayton, Memphis, Atlanta, Washington, New York, Montreal, Ottawa, Detroit, and Kansas City.

The eight-engined Bristol Brabazon I successfully completed its first flight during Labor Day weekend at Bristol, England, remaining aloft 27 minutes. It took off within 1,500 feet at speed of 85 mph, cruised at 160 mph, and reached altitude between 3,500-4,000 feet. The Brabazon I will not go into commercial service but will be used for flight development. The Brabazon II, now under construction, is the production model and will be powered by eight Proteus gas turbines driving propellers.

Bellanca Aircraft Corp. is coming out soon with a new four-place model which will compete with Beech, Ryan, and Cessna in that field—compete in speed and performance and be considerably under in price, according to reports.

Luscombe Airplane Corp. was declared bankrupt in Federal Court in Dallas late last month. The court denied a petition for 30-day postponement in order for company to negotiate for $450,000 RFC loan and to attempt to raise another $150,000 from manufacturers for which company had been doing subcontracting work. Luscombe owed $677,877, had only $7,200 in casn.

Trans World Airline has signed a memorandum of agreement with the Port of New York Authority to work out leases for use of New York International Airport, but continues at La Guardia and Newark Airport until the leases have been signed. The other two trans-Atlantic U. S. flag carriers, Pan American and American Overseas, along with Northwest Airlines, reached agreement with the Port Authority for use of Idlewild on August 5.

Chicago and Southern Air Lines has declared a dividend of 35 cents a share payable October 1 to stockholders of record September 20. C & S earned a net of $296,621 for first six months, against $267,682 in same period last year. However, latter figure was subject to no income tax because of carry-over benefits, while a $577,621 net operating profit for January-June this year was subject to full income tax accruals.

The Air Force and TWA have begun negotiations for renewal of the latter's lease at Fairfax Airport, Kansas City, where its maintenance base is located. The airline's present lease expires October 31, 1950, and fears that it might not be renewed had resulted from a recent Air Force announcement that the Fairfax facilities were needed for an expanding reserve training program.

American Aviation

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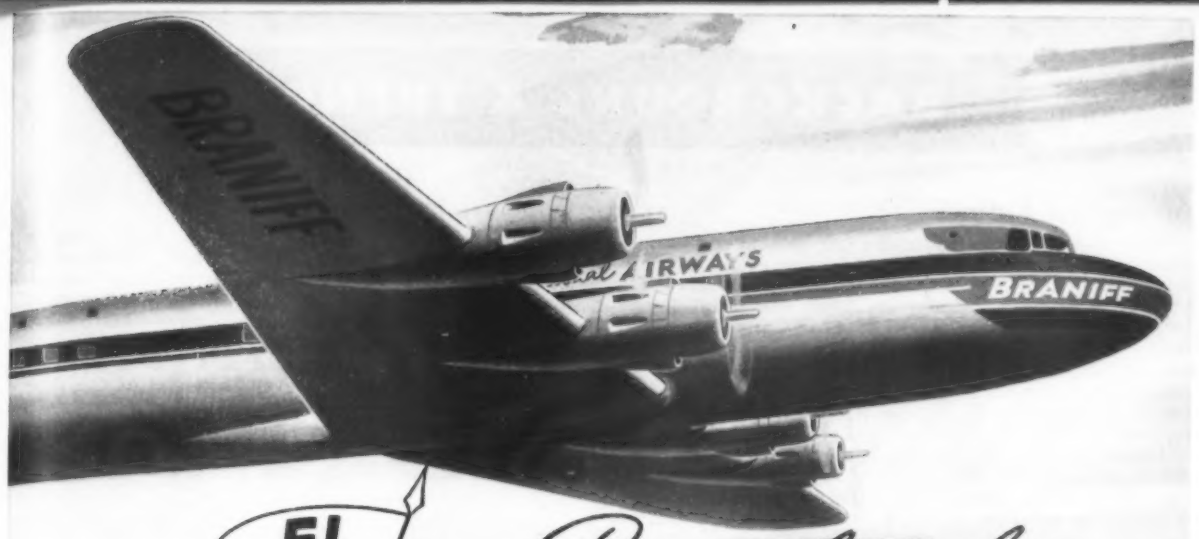

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BACKGROUND & TRENDS

Among the Airlines

Air traffic has been up while rail passenger business shows a marked decline—down almost 14% for first seven months of the year. Some airline officials state that DC-6's and Constellations have cut heavily into long-haul rail business. **Alvin P. Adams and Associates,** New York aviation consultants, have estimated that volume of air passenger transportation in the U. S. during May exceeded amount carried in Pullman and parlor cars for the first time. After adjusting Pullman figures to reflect difference between airport-to-airport mileages and circuituous routings required by rail, Adams showed 603 million revenue passenger-miles for domestic airlines against 582 million for pullman. Incidentally, **Association of American Railroads** has created the new position of director of competitive transportation, filled by Brig. Gen. Lacey V. Murrow.

Colonial Airlines is negotiating with Luttrell & Senior for purchase of four DC-4's formerly operated by Peruvian International Airways . . . **United Air Lines** is cutting publicity department expense by reducing personnel in district offices, and closing some of these offices, including Washington . . . The 60 airline members of the **International Air Transport Association** had a 1948 safety record of one fatality per 30,487,279 passenger-miles against one per 21,184,108 in 1947. Total 1948 fatalities were 325 against 488 the year before.

Internal Revenue Steps In

After watching a lot of tax revenue go out the window, the U. S. Bureau of Internal Revenue has decided that air, train or boat tickets bought outside the U. S. for use within the U. S. are subject to the 15% transportation tax. Its ruling brought a flood of inquiries, and the bureau is planning clarifying instructions. It decided that the tax applies to "payments" made in the U. S. and described the transmittal of funds across the borders for such purchases as "payments" in the sense of the law. You can't avoid it by using mail, telegraph or a travel bureau.

Officials of the Air Transport Association were meeting with bureau executives last week in an attempt to iron out the highly confused situation which followed the bureau's ruling. ATA officials believe that the ruling is illegal and unenforceable in its present form and that the only logical remedy is to amend or repeal the tax.

Connies for C & S?

Although confirmation was yet to come, Chicago and Southern Air Lines was reported to have virtually decided to order five new type 749 Constellations as replacements for six DC-4's it now operates. The decision resulted from careful engineering analysis and discussions with manufacturers, and was prompted by the company's unfavorable competitive position with slower equipment.

Shell Tests B-26 Jet

Shell Oil Co. is running lubrication and other tests on a B-26 equipped with a J-31 jet installed in its tail. Air Force had it built with a jet during latter part of the war and has now released it to Shell under an AF bailment contract for testing, all under direction of Jimmy Doolittle. An airscoop on top feeds air for the jet, which adds 30 mph at 10,000 ft. Shell got the plane, which also has two R-2800 engines, in June and has been flying it since mid-August. D. N. Harris is project engineer in charge.

Goodbye to the B-19

The famous old Douglas B-19, of which only one was built, is no more. Charlie Babb, president and general manager of The Babb Co. Inc., has bought it for scrap. Before selling it, the Air Force cut it in half to prevent anyone from flying it away—both the AF and Douglas were anxious that it not only be destroyed but that it would not be used as a hotdog stand or a diner. Only one B-19 was ever built and at the time it was the largest thing in the air. It was never used for anything but testing; most recently it was equipped with Allisons. Its final resting place was Tucson, Ariz., and Babb is now selling parts and engines.

Easy on Star Routes

Post Office Department, which now has necessary legislation to establish a number of air star routes, will go easy in the initial stages and probably won't advertise more than three or four for the first several months. High on the list, and maybe the first one, is a route to a leper colony in the Hawaiian Islands. Snake River region in Idaho is also being studied.

Support for Air Shows

The air show business, far from disappearing, is on the upswing around the country, getting continued support from industry. Gulf Oil Corp. has renewed its $3,500 support and sponsorship of the national aerobatic competition for the All American Air Maneuvers to be held in Miami next January 13-15. Continental Motors had previously put up another $20,000 for its midget plane competition at Miami, assuring continuance of the annual Florida affair.

Prize money for the Gulf championship will be: first, $1,750; second, $875; third, $525; fourth, $350. Entry blanks will be available October 1 from S. C. "Jiggs" Huffman, general manager of the maneuvers, at Room 415, Professional Bldg., Miami.

It has also been revealed that Birmingham is seriously considering revival of the spring air show which made that city air famous before the war. New financing is being studied, with decision expected soon.

People

Dr. Albert Plesman, president of KLM Royal Dutch Airlines and one of the best-known figures in international civil aviation, celebrated his 60th birthday on Sept. 7 coinciding with his 30th year in civil aviation. All of those 30 years have been as president of KLM . . . **J. H. "Slim" Carmichael,** president of Capital Airlines, was profiled by Wesley Price in the Sept. 2 "Saturday Evening Post" in an article entitled "He Wants to Make Money on an Airline " . . . **Ken Ellington,** Republic Aviation Corp.'s public relations director, has been named chairman of a committee to arrange "Cradle of American Aviation Day," the opening day feature of the Nassau County Golden Anniversary Industrial Exposition to be held at Roosevelt Field, Mineola, L. I., Oct. 8-12.

J. M. Lewis, vice president-operations of Monarch Air Lines since the start of the Colorado feederline, has resigned effective October 1 for personal considerations. Lewis, who assisted in the organization of the company, indicated that his future work will not be in the airline industry.

$40,000,000 NUT

To U.S. airlines, bad weather still makes up a large part of the 'nut' (operating expense). How large a nut? "The commercial airlines, operating about 1,000 aircraft, will lose approximately $40,000,000 (in 1948) due to air traffic congestion, delays, flight cancellations and schedule unreliability."

(Congressional Aviation Policy Board Report, 1948)

Seasonal declines, non-sked competition, low airmail subsidies, and labor costs are often cited as causes of airline deficits. But bad weather is still commercial aviation's costliest problem. Once the Airlines master weather, most of their navigational—and financial—troubles will be over. And GCA is the one navigational aid that masters bad weather.

GCA is airport radar that shows a CAVU picture in all weather of all flight operations within a 30-mile radius of the tower. Each aircraft's position—its distance, altitude and bearing—is clearly and accurately visible on GCA's radar Search Scope. With GCA, tower control now has an even better view of flight operations than tower personnel formerly had on clear weather days.

GCA is the fail-safe solution to the chief operational problems caused by bad weather: holding stacks, landing and takeoff integration, turn-backs and safety-climbs, and rogue aircraft.

Unstacking aircraft in IFR conditions is greatly and safely speeded by GCA. Planes are called out of stacks at 3 mile *space* intervals instead of 10 minute *time* intervals. Traffic congestion is never allowed to develop.

Landings and takeoffs can be closely integrated. With exact knowledge of each aircraft's position, tower GCA can coordinate landings and takeoffs with clear weather speed and safety. Flights now take off and land on time.

Turn-backs and safety-climbs for departing aircraft in IFR weather, another cause of delay and expense, is unnecessary with GCA. Advised by radio of their relative position to other aircraft, departing planes immediately proceed "on course."

When a rogue aircraft threatens, GCA's high-powered Search Scope immediately picks up its position and the tower brings the rogue under control. Thus GCA eliminates danger of collisions and the time-consuming cost of dispersing all other aircraft until the rogue is safely isolated.

In GCA's first winter (1947-1948) of operation at LaGuardia Airport in New York, the following improvements were noted: "During the winter period 1946-47, there were 3,877 scheduled flights cancelled or unable to land... 4,582 delayed... at LaGuardia due to traffic congestion. In the same period one year later (1947-48), there were NO cancellations caused by air traffic congestion... only 555 flights delayed."

"The average time per aircraft delayed at LaGuardia was reduced during the year from 33 minutes to 11 minutes. The airport capacity at LaGuardia was increased from 10 planes in and out per hour in 1947 to 30 per hour in 1948." (ATA)

True, GCA was not the *only* navigation aid at LaGuardia; but GCA was the only *new* navigation aid added in 1948.

GCA's record proves its competence as a fail-safe, reliable navigation aid. It is the Airlines' answer to the costly effects of weather. By seeking an expanded use of GCA, U. S. Airlines can *save* the greater part of that $40,000,000 every year. And they can sell more business than they can handle by consistently offering flights "always on schedule with safety."

GCA *Gilfillan*
LOS ANGELES

RCA *International Export Distributors*

PIONEER DEVELOPER AND MANUFACTURER OF GCA FOR THE CAA, USAF AND US NAVY

EDITORIAL

(CONTINUED FROM PAGE 1)

In these 30 years of world air transport, what have the dreams and hopes of the founders produced?

On the positive side we have seen a phenomenal expansion of a world-wide network of scheduled air routes reaching to every habitable part of the globe. The airplane has conquered oceans as well as continents. Passengers have increased from a few hundred to high in the millions. Distances have diminished from months and weeks to days and hours. A new world has been unfolded, physically accessible to all. There has been no precedent in history for the airplane—nor has any form of transportation been frought with so many benefits, actual and potential.

On the un-realized side, the dreamers must continue dreaming and the planners must continue to plan. As the director-general of IATA, Sir William Hildred, points out in his annual report, the airplane is still shackled to government subsidy. It is still shackled by red tape. Rising costs have made it impossible for the mass market, which hovers tantalizingly overhead, to be tapped. The distances which have been shrunk by the airplane have not been shrunk in terms of cost.

Yet there is room for hope. The downward trend in costs has begun and maybe, in the days of jet which are ahead, the airplane will tend to become what some of the visionaries have hoped for—the least expensive form of transportation extant. If in 30 years the commercial airplane has come so far so fast, who can say what the future really holds? Enough that we know the airplane is still in its infancy today.

On this 30th anniversary of commercial world air transport, the record in perspective is good. The outlook remains unlimited. But the shackles of government subsidy must, somehow, be broken so that this globe, now continually shrinking under pressure from the progress of the airplane, can be known, seen and understood by tens and hundreds of millions in the many decades to come. For in knowing, seeing and understanding, is the confidence that the One World of hopes may someday be the One World of reality.

Single Engine Caution

THE CARRIAGE of mail by air, and the first air passengers, all began with single-engine airplanes.

Now the CAB is permitting a few feeder airlines to launch operations with single-fan equipment.

If handled rightly, this new policy will be a constructive advancement to the entire air transport field. But unless caution is exercised, the new policy will boomerang as a retrogression.

The public must be given full understanding of the type of equipment to be used. Single-engined airplanes must not be held out as being on a par with multi-engined transports. An inter-line passenger from a distant point must not be led to believe he will transfer to a DC-3 when such is not the case.

Single-engined airplanes have a very rightful place in aviation but let's not fool ourselves or the public into believing that they are transports. They are fine for carrying the mail, and for carrying those who don't expect anything more. But the let-down is going to be pretty terrific unless the connecting passenger is fully advised in advance.

We believe the CAB might have been wiser had it specified that the single-engined equipment was to be flown with mail only for an experimental period—and paid the operator the difference in outright subsidy. Transporting passengers by common carriage is a responsibility—a responsibility as much on the CAB as the authorizing agency as on the operator himself.

There are many people who accept without question a multi-engined airplane who are quite skeptical of getting into a small lightplane. In selling interline connections, or in promoting this single-engined service, great caution must be exercised not to force the issue. The single-engined airplane can prove itself—again—in air transport if the operator uses common sense and if the public is encouraged to patronize by a good operating record. But the motto should be: don't sell a ticket on a single-engined airplane unless the passenger knows fully about the equipment. The originating carrier has a big responsibility in this matter, too. Let's not retrogress with single-engined airplanes. No matter how you look at it, a Cessna isn't a DC-6.

The Open Palm

IT TAKES VERY little air travel in Europe to point up the tipping nuisance at airports in the United States. While there are plenty of open palms, especially for Americans, in moving about the Continent, the tipping nuisance is at a minimum at airports. Whether European airlines get the credit or whether the airport managements are responsible, the fact remains that baggage handling is considered to be part of a passenger's ticket unless some special service is involved.

In the U. S., it's still the old racket—the hand out for carrying a bag a few feet. We know of one airport that has a sign stating that baggage service to the incoming baggage counter is free, but the sign is so small and dusty that no one notices it. That part of the public unaccustomed to frequent travel is still getting nicked plenty—and they resent it. The porters can't be blamed, either.

It is time the airlines and the airports got together on a standard baggage procedure and took steps to inform the public by big readable signs explaining what service is tip-free and what isn't. It would be fine to eliminate all tips whatever but we aren't that optimistic. The entire porter handling procedure at airports in the United States is a disgrace.

WAYNE W. PARRISH

"There is not an air base or naval air station in the country which could not organize a program to give the educator something in which to sink his teeth. If this is not a proper function of such establishments, then I should like to know what it is."—**Gill Robb Wilson** in *The New York Herald-Tribune.*

How Douglas is helping to meet the

GROWING CRISIS IN AIR TRANSPORT

Military strategists fully recognize the vital role that air transport will play in future operations.

They realize that tomorrow's transports must be larger, faster, more versatile.

This is why the Air Force has ordered a fleet of new-type cargo planes—the Douglas C-124A.

- **Towering 48 feet above the ground, this giant transport will fly loads up to 50,000 lbs. a distance of 1,200 miles and return to base without refueling.**
- **Reversible-pitch propellers and wing-length brake flaps will enable the C-124A to take off and land from medium-size air fields.**
- **Unique clamshell loading doors and self-contained ramp make it the only transport where heavy field equipment can drive directly on or off the plane.**

Designed to support and supply global operations, the C-124A carries on the quarter-century Douglas tradition of building *dependable* aircraft—always ready—whatever the job, wherever the mission.

LONG BEACH PLANT OF DOUGLAS AIRCRAFT COMPANY, INC.

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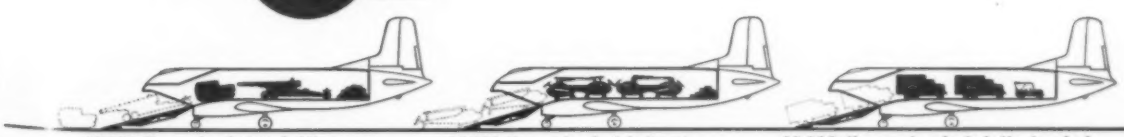

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American Aviation

Volume 13
Number 8

No Aid for Industry:

Military Purchase of Civil Transports Barred by Senate

By Gerard B. Dobben

The U. S. aircraft manufacturing industry faces the loss of millions of dollars of military business if language contained in the Senate-passed Air Force Composition bill, H.R. 1437, prohibiting the purchase of certain transport aircraft, is finally approved by Congress.

In its attempt to prevent the military from developing prototype transport planes which might be adaptable to civilian use, the Senate Appropriations Committee wrote language so restrictive that industry lawyers are convinced it would block future military purchases of the following transport aircraft: Lockheed Constellation, Douglas DC-6, Convair Liner, and Martin 2-0-2.

The provision prohibits the Department of Defense from expending any money "for the design, development, testing, tooling, modification, construction, *or procurement of any transport of cargo aircraft intended primarily for commercial use, whether or not such aircraft may be adaptable for auxiliary military use.*"

It is believed that this limitation would restrict the military to future purchase of only those civilian types which were designed and developed either by the military alone or in conjunction with the airlines. Had such a law been in effect before the war, it would have prevented the purchase of more than 10,000 DC-3's (C-47's) for military use because development of the DC-3 was a purely civilian project.

Some Could Benefit. Purchase of the Constellation, DC-6, Convair Liner and the Martin 2-0-2 would be prohibited under the language of the bill because they are industry developments. On the other hand, because the military developed the Martin Mars, the C-82 Fairchild Packet and the Boeing Stratofreighter, these three aircraft would not come under the limitation and could be purchased for military transport use. The general effect, of course, is to tie the hands of the military on purchases of transports for military use.

This might result in cancellation of plans for the purchase of from 10 to 20 Constellation and DC-6 aircraft. Military plans for the purchase of the two-engine Convair Liners and Martin 2-0-2's are not known.

Final action on the Air Force Composition bill will not take place until sometime next month. As the limitation clause was added by the Senate to the House-passed version, it will be the subject of conference committee deliberations. House conferees are to be appointed possibly the week of September 19 or 26. As soon as these conferees are known, industry representatives will reveal to them the implications of the Senate-passed amendment. There is some hope for believing that the restriction against "off-the-shelf" purchases will be eliminated.

The Senate limitation seems to bear out contentions that many legislators as well as the military are definitely opposed to any legislation which would bring about a joint effort between the military and the industry in developing future prototype aircraft primarily for civilian use. It is believed that the military would be willing to do the job if separate funds could be provided and the military given more or less free reign.

Military-Industry Cooperation. Evidence of the military thinking on this question has come to light in connection with consideration of prototype bills by Congressional committees. So far the military has shied away from any endorsement of legislation which would place the development project of civilian type transport aircraft, adaptable for military use, on a military-industry basis.

But there is some evidence that the military may be thinking in terms of doing the job on its own, particularly in the jet-transport field. If such a development does take place, the civilian transport industry may still get a jet aircraft at considerably less than the estimated $30,000,000 to $50,000,000 development cost which has kept the private U. S. manufacturer out of the jet transport field.

Gen. Jacob L. Devers, chief, Army Field Forces, states that his branch of the service may eventually go to jet troop carriers "wherein parachuters will not be bothered by prop wash of conventional aircraft.

"With a jet troop carrier we could go in at tree-top level at 500 to 600 miles per hour and at destination climb to 800 feet, then slow down to 200 miles per hour and let our boys jump," Devers stated. "Coming in at low level and high speed greatly increases our chances of success and makes us much less vulnerable. Today the conventional type plane flying at slow speeds is an easy target. Of course we could operate at night, but then there is the ever-important air supply for these troops which must be conducted in daylight."

If the military should develop such a jet transport in the relatively near future, it is estimated that the aircraft industry could modify such a military version for civilian use for from $5,000,000 to $10,000,000. There are industry leaders who feel that after the initial military development, the industry and the airlines should and could bear this modification cost. First civilian transport types developed from the original civilian model probably could be offered to the airlines for around $1,000,000, it is believed.

Prototype Action? Some action on prototype legislation may be expected in the next session of Congress. Sen. Edwin C. Johnson (D., Colo.) and his Republican counterpart on the Senate Interstate and Foreign Commerce Committee—Sen. Owen Brewster (R., Me.)—are greatly concerned over this country's lag in the development of jet propelled aircraft.

Sen. Johnson announced recently that at least three U. S. airline presidents are negotiating with the British for purchase of jet transports. He did not name the companies but it is understood that Pan American Airways has a revocable order for the de Havilland jet Comet. The order would become firm if there are no U. S. jet transports available when the Comet has proved itself, it is understood.

Because of the British threat in this field, both Johnson and Brewster are determined that the air soon be cleared as to what part the government is to play in the development of these new type transports. The Senate Interstate and Foreign Commerce Committee has served notice on the National Defense Establishment that it wants a report soon as to the military attitude on prototype bills before Congress. It has kept open its hearings on airline finances, pending a written report from the military on prototype development.

In a recent conference between the committee and military leaders, little information was obtained indicating what the military attitude might be on prototype legislation. Sen. Johnson was frankly disappointed with the response of the military leaders. About all the committee heard was confirmation from industry leaders that no jet transport aircraft project is being undertaken at this time, due to prohibitive development costs.

National Air Races Slated To Undergo Radical Changes

Although the National Air Races in Cleveland over Labor Day weekend fared better than usual in attendance and financial returns, there is little doubt that the annual classic will undergo radical changes before next year.

Even before Bill Odom's fatal accident in the Thompson Trophy Race on Labor Day, air race officials had already determined to make drastic changes in the 1950 show.

Public and industry reaction after the tragic crash left little doubt that a new race pattern must be found. Civil Aeronautics Administrator D. W. Rentzel on September 7 announced that he will call a meeting of CAA officials, the National Aeronautic Association, and other interested parties to discuss the future of the National Air Races and "re-examine all phases of spectator protection, including the possibility of a new site."

Rentzel intimated that CAA, which has to approve the holding of the races, would oppose any more high-speed closed-course races, such as the Thompson Trophy Race, unless a course more distant from populated areas can be found.

Sponsor to Continue. It was known before the start of this year's races that the Thompson event would have to be changed and that 1950 would probably be the last closed-course race with the types of planes that have been used. The Odom accident may well bring about a change in 1950, although two years are generally required for building new types. The Corsairs and other former military planes that have participated in the race for the past few years are obsolescent and aging.

However, Thompson Products wants to continue sponsoring some major air event, and will probably work out a satisfactory substitute for the 225-mile 15-lap closed-course race the spectators saw this year.

It seems certain that the Bendix transcontinental race has been run for the last time with reciprocating engines. Few individuals can afford to buy and modify 400-mph planes, and even for those with money available the choice is limited to one of three or four war surplus plane types.

Officials of Bendix Aviation Corp., which sponsors the cross-country race, are reportedly thinking seriously of only a jet race next year, or, if a reciprocating division race is held, of making it international in flavor. Participation of the fastest planes from other countries should heighten interest in the event.

One race official indicated that NAR had to scratch hard for enough entries to fill three full race events this year. But the Goodyear Trophy Race for midget craft is gaining in popularity. It drew the greatest number of applicants ever this year, and in time this race, for "backyard-built" planes of 190 cubic inch cylinder displacement, may become the most popular event.

Scene May Shift. Despite the necessity of major alterations in the programming, there was no indication of NAR officials to discontinue the annual affair. Before the Odom accident, several big cities had started a campaign to snag the races for 1950, Detroit being a leading contender with Willow Run a possible site. Los Angeles and Dallas were also reported to be interested in getting the nationals which have been at Cleveland since 1936 when they were held in Los Angeles.

General admission and grandstand ticket sales on the first day at Cleveland topped 35,000, rose to more than 65,000 on the second day, and passed the 100,000 mark on Labor Day.

Beech Practices Good Public Relations at NAR

One of the largest assemblages of personal planes ever to gather in one area descended upon Cleveland and its environs for the week-end of the races. They filled all the available space at Municipal Airport, packed the parking areas of the downtown lakefront landing strip, filled five small fields in the suburbs and even overflowed to Akron, 35 miles away, where an alert airport management had made exeellent arrangements for their accommodation and their transportation to and from the races.

One of the best public relations projects during the races was that of Beech Aircraft Corp.

In advance of the races, Beech sent out questionnaires to all owners of Beechcraft, inviting them to avail themselves of transportation and other courtesies while in Cleveland. More than 800 returned the stamped reply cards that were enclosed, and most of them actually showed up.

At the lakefront airport, Beech representative C. G. Parkhurst met every arriving plane, regardless of whether it was a Beech or something else, and transported the passengers and luggage from the parking space at the far end of the field to the ad building. Beech owners were driven to their hotels, and at the Carter, the Beech Courtesy Desk, in charge of Assistant Sales Manager Leddy Greever, with two young ladies assisting, performed various courtesies for Beech owners, dealers and distributors.

To top it all, Beech had chartered six 60-passenger motor busses, each of which operated two or three trips each morning from one of several leading hotels to the airport, and returned from the airport to the hotels after the races—all for the benefit of holders of Beech courtesy cards.

1949 National Air Race Results

First, second, and third place winners in the principal events at the 1949 National Air Races in Cleveland, September 3-5, were:

Bendix Trophy Race—reciprocating division: Joe De Bona, first place and $10,000, with an elapsed time of 4 hours, 16 minutes, 17½ seconds and an average speed of 470.136 miles per hour, over a 1,993 mile course from Rosamond Dry Lake, California, to Cleveland Municipal Airport; Stanley H. Reaver, second place and $5,500, with a time of 4:27:37.7 and average speed of 450.221 mph; and Herman Salmon, third place and $3,000, with 4:28:13.7 time and 449.214 mph.

Bendix—jet division: Major Vernon A. Ford, 3:45:51.3 and 529.614 mph; Capt. J. C. Newman, 3:47:00.3 and 524.620; and Lt. Col. L. E. Moon, 3:48:02.1 and 524.551 mph.

Thompson Trophy Race—"R" Division: Cook Cleland, Corsair, 397.071 mph, $19,100 prize money; Ron Puckett, F2G-2 Corsair, 393.527 mph and $8,300; and B. W. McKillen, F2G-1 Corsair, 387.589 mph and $4,600.

Thompson "J" Division: Capt. Bruce Cunningham, flying an F-86, 586.173 mph (new closed course record and also a new lap record of 635.444 mph); and Capt. Martin C. Johansen, 580.152 mph, also in an F-86.

Tinnerman Trophy Race—(105 miles): B. W. McKillen, F2G, 386.069 mph and $3.750; Wilson V. Newhall, F51K, 379.735 mph and $1,750; and J. H. G. McArthur, Spitfire, 359.565 mph and $1,050.

Sohio Trophy Race—(105 miles): Bill Odom, F-51, 388.393 mph and $3,150; Ron Puckett, F2G, 384.866 mph and $1,750; and Charles Tucket, F-63, 381.529 mph and $1,050.

Goodyear Trophy Race—(midgets): William Brennand, 177.340 mph and $7,000; Keith Sorensen, 176.726 mph and $4,000; and S. J. Wittman, 176.244 mph and $2,200.

Allison Jet Trophy Race—(Indianapolis to Cleveland): Lieut. Walter C. Rew, F-80C powered by Allison J-33-23 turbo-jet, 26:13.5 and 594.806 mph; Lieut. F. N. Fugate, Lockheed F-80C, 26:26.3 and 590.007 mph; and Lieut. P. E. Coleman, F-80C, 28:19.7 and 550.643 mph.

How They Did It At Cleveland:

Slicked-Up Racers Set Speed Records

By James J. Haggerty, Jr.

What did the Cleveland air racers do to their planes to make them go faster?

Number one, of course, was Cook Cleland's white Chance Vought F2G, which is a Corsair equipped with a Pratt and Whitney R-4360 Wasp Major engine. The big design change which enabled Cleland to take his second Thompson Trophy Race with a record speed of 397 mph was a wing clipping job. Cleland took approximately four feet off each wing of his big Corsair—so much, in fact, that he also had to clip off part of an aileron.

To eliminate burble at the edge of the shortened wing, Cleland placed steel chord-shaped plates at the wing tips. The plate was larger than the chord of the wing at the tip, so that it extended about two inches above and below the wing surfaces. This provided a fairing which guided the flow of air over the ailerons and compensated for the reduced control caused by shortening the aileron surfaces.

The effectiveness of Cleland's design is indicated by the fact that the second and third place planes in the Thompson were also F2G's (Ron Puckett, 2nd at 393.5 mph and Ben McKillen, 3rd at 387.5 mph). Puckett's and McKillen's planes were almost indentical externally. Both had clipped the tips off the wings but had not even approached Cleland's drastic modification.

Changes for Odom. The most extensive modification of all the planes in the races was that of the ill-fated Beguine, a North American F-51 which crashed in the Thompson, killing Bill Odom.

The major design change in the Beguine was the removal of the drag-producing airscoop from underneath the fuselage. To provide a cooling system, two large tubular airscoops, resembling ram-jet engines, were placed at the wing tips, the air thus induced being channeled through the wing to the engine.

Hot air forced out the rear of these tubes also provided a thrust effect, not enough to add anything to the speed of the plane, but enough to balance the drag created by the wing-tip airscoops.

The cockpit of the Beguine was also streamlined, the bubble canopy used on the standard F-51's being eliminated in favor of a faired cockpit, the top of which ran straight to the tail surface.

With these design changes Odom was able to win easily in the Sohio race against, among others, less radically altered F-51's.

Bad Luck for Johnson. Anson L. Johnson, last year's Thompson winner, also did away with the underslung airscoop in his F-51. Johnson, however, employed a different cooling system from that of the Beguine. Instead of the wing-tip scoops, Johnson cut air intakes in the leading edges of his wings, as well as another in the nose of the plane, just behind the propeller. Other than this change, and the customary engine "souping," Johnson's plane was an ordinary F-51.

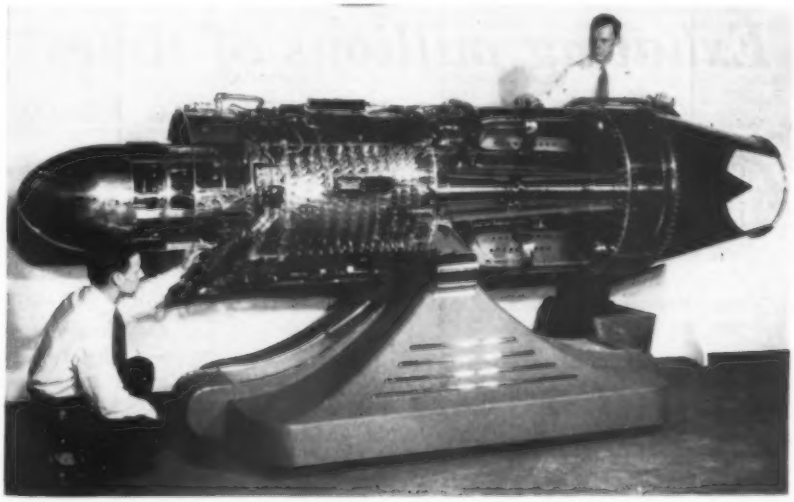
Obviously, his design produced a very fast plane, although his Thompson race didn't show it. But for some bad luck, Johnson might have provided some real competition for Cleland. On the first two laps he had difficulty retracting his landing gear, and by the time he had corrected the difficulty, Cleland had lapped him. From there on, however, Johnson held his position just behind Cleland without losing ground, despite Cleland's record pace, until engine trouble forced him to quit altogether on the fifth lap.

Even a five-bladed propeller turned up in this year's races. It was installed on a RCAF Spitfire flown by Lt. J. H. G. McArthur, who placed third in the Tinnerman Trophy Race, but who was unable to qualify for the Thompson. Actually, the five-bladed prop was not a modification—it was standard equipment on all Spitfires of the Mark XIV series. The theory of the five blades is that the propeller gets more "bite" without an increase in power.

Slick for Speed. Some planes were "souped-up" externally without any structural changes. Joe De Bona, Bendix winner, said he was able to get eight extra miles per hour out of his F-51 because of its extremely slick surface finish. Forty-eight separate coats of paint and surfacer were applied to De Bona's plane. On landing at Cleveland after four-plus hours of grueling Bendix, the F-51 was still "slick as a whistle." De Bona also used a special hand-forged Hamilton Standard high-efficiency propeller.

De Bona was not, of course, the only pilot to slick up his surfaces. On Odom's Beguine, running a finger along the fuselage you could not even feel a rivet. Cleland's white Corsair also had a high gloss, as did Jim Hagerstrom's stock-model F-51. Several others had "slicked-up" planes with various degrees of polish. Surprisingly, however, a number of entrants ignored this comparatively inexpensive method of getting added speed.

In addition to the external modifications, practically every plane had some trick engine gimmick—injection systems, special vanes in the cooling system, etc. The boys were pretty close-mouthed about such improvements, though. Those are the secrets of the trade.



Cutaway J-47—Visitors to the National Air Races downtown headquarters in Cleveland's Carter Hotel were able to see for the first time the operation and internal components of a General Electric J-47 turbojet engine by means of this cutaway display model. The display was equipped with an aircraft-type throttle with which the visitors could start the engine and see the turbine and compressor in operation. Colored lights and painting effects gave the illusion of an engine in operation. The water injection system, used to augment the J-47's basic thrust of 5200 pounds at takeoff, was seen publicly for the first time. Production models of the jet engine are used in several Air Force planes, including the North American F-86, which set a world's speed record of 670.981 mph shortly after the air races last year.

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traffic is usually light, and will be approved temporarily until June 30, 1950.

FAI Paves Way to New Jet Records With Rule Changes

By Keith Saunders

Two important changes in the speed record regulations of the Federation Aeronautique Internationale, adopted at the FAI meeting in Cleveland last week, take cognizance for the first time of the fundamental differences between jet aircraft and those powered by reciprocating engines.

One change, recommended by the Sporting Commission of the international rules-making body, makes provision for the establishment of special records for airplanes powered wholly or partly by engines other than reciprocating engines.

The other change, also recommended to the General Council by Maj. R. H. Mayo's Sporting Commission, opens the way for the setting of faster speed records by today's high-speed aircraft by permitting them to fly at the high altitudes at which they are most efficient.

The old rule, adopted years ago, required a competitor for a closed-course speed record to cross the starting and finishing lines, and the pylons or turning points, at a maximum altitude of 100 meters (333.7) feet) so as to permit direct visual observation by the stewards.

Altitude Immaterial. The revised rule (Article 9.4.2. A) removes this arbitrary limitation and states that "The competitor will be free to make the attempt at any altitude he may choose, provided that adequate evidence be presented that turns have been properly made, accurate timing is secured at the start and finish lines, and that identification of the aircraft is positive at the start, at the turns and at the finish. The altitude at the finishing line shall not be lower than at the starting line."

The latter provision was inserted to prevent a pilot from making his race at a high altitude and then diving in the last lap to gain speed.

Import of the revision is that jet-powered aircraft, operating in the transonic and even in the supersonic speed ranges and at altitudes of 20,000 feet and more, can be accurately timed and identified by radar-tracking devices on the ground and thus can qualify for official speed records.

Additional Actions. Other actions taken with relation to the Code Sportif, through which the FAI controls international aeronautical sport, particularly from the standpoint of performances, records and air displays, were as follows:

Two consecutive distance records in a straight line will be restricted to a difference of 25 kilometers when the landing takes place on an officially recognized landing field.

In case a crew member aboard an aircraft making a record trial makes a parachute jump before the record is beaten, his name will not figure in the FAI record list.

For world altitude records, true height will be measured and reckoned from sea level as defined in each country for the national cartography.

It was decided not to recommend the creation of parachute jumping records at the present time, but FAI will name a committee to study the question of parachuting and to work on a project for parachute licensing.

The date limit of the validity of light aircraft records, classified according to their engine capacity, is postponed to December 31, 1949.

Air Tour Agency. The most important action taken by the International Touring Committee of FAI, which seeks to facilitate international air touring, was to approve a request from the National Aeronautic Association for authority to designate an agency in the United States to provide air touring information and to recommend that each of the national aero clubs in FAI establish their own air touring office and send information of interest to the FAI for publication.

The NAA has not yet announced its designee, but was known to have in mind the Aircraft Owners and Pilots Association, which already is gathering such information for its own members.

The Touring Committee also won adoption of a recommendation that there be instituted an FAI pilot's badge for persons holding an FAI pilot certificate. (Prior to the establishment of our own licensing authority in the Civil Aeronautics Administration, all pilots' licenses were issued by the FAI.)

It was deemed by the committee to be impractical at this time to pursue the project for the issuance of international landing cards.

Foreign delegates attending the Cleveland meeting, second to be held in this country since FAI's founding in 1905, included:

United Kingdom: Col. R. L. Preston, secretary general of the Royal Aero Club; Maj. R. H. Mayo, chairman of the Air League of the British Empire; A. F. Houlberg, chairman of the Models Commission, and Lord A. Ventry.

Canada: Gordon F. Henderson, vice president of the Royal Canadian Flying Clubs Association; Donald L. Buchanan, secretary-manager of RCFCA; Samuel H. Bernardo, immediate past president of RCFCA; and Dennis Yorath, president of the RCFCA.

Switzerland: Adolph Gehriger, secretary of the Swiss Aero Club.

Spain: Don Jose Albinana Ferrer and Don Jose Fernando Pilon.

Argentina: Lorenzo Taylor, of the Aero Club Argentine, and Don Arturo Llavallol.

Sweden: Col. Harold Enell, vice president of FAI and secretary general of the Royal Swedish Aero Club.

Denmark: E. Falkmar, secretary general of the Royal Aero Club of Denmark.

Belgium: Surgeon General Charles Sillevaerts, vice president Royal Aero Club; Georges Hanet, secretary general of RAC; and Willy Grandjean, administrator of the RAC.

Monaco: Marcel A. Palmaro.

France: Jean Bleriot, general secretary of FAI; Baron de la Grange, vice president of FAI; Blondel La Rougery, Robert Boname, Roger Cartier, Madame Jaffeux-Tissot, and Robert Cartier.

Netherlands: C. Kolff, acting president of Royal Netherlands Aero Club; Eelco Schuller; Dr. Ir M. H. Damme; P. J. Yperlaan, secretary general of the RNAC; and Jonkheer van den Berch van Heemstede, former secretary general and general manager of IATA, director of KLM Royal Dutch Airlines, and honorary member of the RNAC and the FAI.

Cuba: Dr. F. Prieto, secretary of Aviation Club of Cuba; Guy Descamps, vice president of ACC; Luis F. Ardois, treasurer of ACC and member of Greater Miami Airport Association; and Dr. Roberto de Cespedes, member of board of directors of the ACC.

Bolivia: Jorge Diez Medina.

Uruguay: Lieut. Col Conrado A. Saez.

Poland: W. Humen and J. Przymanowski.

Hungary: Imric Koos.

Turkey: Emel Dilmen, president of the Turkish Air League, and Hakki Gueuksever.

Hyderabad: S. Khanna.

Louis E. Leverone and William R. Enyart were general co-chairmen of the conference, which lasted September 2 through September 8, and R. M. Phelps, executive vice president of the NAA, served as conference director.

Viscounts for BEA-BOAC— British European Airways and British Overseas Airways Corp. have started negotiations with Vickers-Armstrongs Ltd. for purchase of an undisclosed number of Viscount V-700 turbo-prop transports such as shown here. When put into service within next three years, the Viscount is expected to be the first commercial airliner in the world using propeller turbines or "prop jets." Powered by four Rolls-Royce Dart engines, the 40-passenger craft will gross 50,000 pounds and is rated at cruising speed of 300-plus mph at 25,000 feet.

Airline Promotional Fares Extended for 9 Months

By WILLIAM V. HENZEY

The Civil Aeronautics Board last week took a major step towards clearing up the impending certificated airline fare muddle when it issued its long-awaited promotional-fare policy statement. Unprecedented in its specific characteristics the statement not only gave a green-light to a majority of existing tariffs, but paved the way for various coach proposals not yet in effect.

Faced with what it termed establishment of coach business on a "broad and indiscriminate basis" or an untold number of litigatory proceedings, the Board was practically forced to adopt and make public standards on which to gauge the merits of present and proposed reduced-fare schemes. Accordingly, it broke promotional tariffs down into four general categories—coach, family plan, no-meal, and miscellaneous—and, "for the benefit of the public and the guidance of the domestic certificated air carriers" adopted the policy which it intends to follow during the coming year.

On coach fares, which are typically at a level of approximately 4c a mile, the Board stated that available facts indicate they generate a substantial quantity of new air travel which can be profitably carried by the certificated carriers.

Special conditions which appear to require consideration in evaluating such operations are: (1) that they be conducted over routes having a heavy flow of traffic; (2) that high density equipment (aircraft having more than the average number of seats) be used; (3) that the service be scheduled so as to minimize the diversion of traffic from regular flights; and (4) that all non-essential services to the passenger be eliminated, such as meals, extra stewardesses, full reservations procedures, etc.

Services Approved. Apparently meeting these requirements and approved for an additional nine-month period (until June 30, 1950) were Capital Airlines coach services between New York and Washington, on the one hand, and Chicago and Minneapolis, on the other; Northwest Airlines service between New York and Seattle; and, TWA's Stratoliner coach operation between New York and Chicago.

Also marked for approval is Western Air Lines' proposed coach operation between San Diego and Seattle which is scheduled to become effective October 15, and a currently-suspended coach tariff of Northwest between Chicago and Portland. Such action on these two tariffs represented one of the few instances in CAB-history that tariffs have been affirmatively approved prior to their effective dates.

Ruled out for profitable coach operations, however, was the conventional DC-3 aircraft which, the Board said, must attain an "almost unattainable" load factor in excess of 85% to be successful. This affects current operations of TWA between Kansas City and Los Angeles and Continental Air Lines between Kansas City and Denver which are performed with DC-3s. These will not be extended by CAB beyond September 30.

A proposed expansion of coach services as far south as New Orleans by Capital and Miami by National will be disapproved, CAB said, although no specific reasoning was advanced for the contemplated action. Capital's service was to have been conducted with 50-passenger equipment and National's initially with 46-seat aircraft.

Despite the curb placed on these few operations, however, coach-fare exponents were encouraged by the Board's general conclusion that "the success of air coach tariffs leads us to the conclusion that some further experimentation in this field may well be justified." Careful consideration of new tariffs which meet the conditions outlined above was promised.

Family Plan. The half-fare family plan which applies to travel on Mondays, Tuesdays, and Wednesdays appears to have been successful, CAB said, in building up traffic for the carriers during the period of the week when traffic is usually light, and will be approved temporarily until June 30, 1950. This is for three months longer than the industry had asked.

For those carriers not yet parties to the "plan" but desiring to join, the Board requested they support proposed tariffs with adequate traffic data, indicating the nature and extent of their off-peak traffic loads. There will not, however, under the announced policy, be any approval for establishment of the "plan" on a 7-day week basis.

Of a more localized nature, but with precedent-setting characteristics, is Western and Inland's 5%-reduced no-meal fares which will be approved for nine more months provided the carriers refrain from segmentizing the program. Under tariffs now on file, both lines have proposed an extension beyond September 30 on all segments except Western's extreme west coast routes. On the latter, WAL contemplated operation of a premium service with Convairs at 6.1c per mile and its previously-mentioned 4c coach service. Should they adhere to the Board's policy, which is most likely, a three-level fare structure may be created on the west coast.

On other types of fare programs the Board appeared less confident, largely because of the short-length of time the fares have been in effect. These include educational fares and group travel fares which have been established by feeder-lines to stimulate local traffic. Further experiments will be permitted until January 31, 1950.

Under the new policy, airlines having promotional fares in effect will be required to maintain an adequate statistical record of the results of the fares, reporting this information to the Board on a monthly basis. This, the Board explained, is to establish a firm statistical basis for determining whether the various types of promotional fares should become a permanent part of the passenger fare structure of the domestic lines.

To those lines contemplating filing of new tariffs CAB expects submission of detailed economic justification both from a traffic and cost standpoint and cautions the carriers that the burden of proof for the establishment of additional reduced-fare service is clearly on such carriers.

Concluding, the Board said, its announcement should not be interpreted as permitting the indiscriminate extension of coach fares nor a general debasement of the existing passenger fare level.

20 Years With PAA— Humphrey W. Toomey (right), Latin American Division manager for Pan American Airways, is shown receiving his 20-year service pin from Wilbur L. Morrison, PAA vice president. In his rise from pilot's cockpit to managership of PAA's largest division, Toomey has played an important role in international air transport.

To Reserve Air Cargo Space

Something new in the field of air cargo—reserved space—would be provided under a tariff which Northwest Airlines has asked the CAB to approve. Shippers would be permitted to reserve cargo space on NWA Stratocruisers, reservations being validated by representatives of the airline stamping the appropriate airbill.

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Celebrating its 15th anniversary of scheduled airline operation, Continental has established an outstanding record of 344 million passenger-miles flown, and every mile a safe mile. Continental's entire fleet of ultra-modern Convair-Liners and sturdy DC-3's rely exclusively on dependable BG ceramic insulated aviation spark plugs, for round-the-clock passenger and freight service.

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13,705 Miles With Capt. Eddie:

Rickenbacker's Tour Wins Friends in Latin America

By WAYNE W. PARRISH

Capt. Eddie V. Rickenbacker, president of Eastern Air Lines, was misnamed at birth.

His name should have been Eddie V. Indestructible.

Up until August 1, 1949, he had lived and survived more lives than any hundred men. But in the month of August he added a new and tough chapter to an already-crowded life by leading a party of 24 guests and crew members on an air tour of Latin America.

Only Eddie survived completely intact, completely calm, and completely the master of the situation. Guests and crew members fell by the wayside, exhausted.

A good will air tour of Latin America under Rickenbacker's direction is a man-sized chore. It was no holiday. It was exciting, it was interesting, it was a superb trip—but it was also work. The work involved was keeping pace with Rickenbacker, who seems to keep going day and night without missing a beat.

Arrival receptions, cocktail parties, press conferences, luncheons, dinners, autograph seekers, formal state calls, visits from old friends, farewell receptions—on and on through one country after another, day after day, until the month of August seemed to have been stretched six times.

Good Will. But today Eddie Rickenbacker is the best known U. S. aviation figure in South America. They had all known about him down there—he was as much as a hero to the Latins as to the U. S. But he had never traveled into the continent before. Newspapers carried volumes about his trip and printed countless photographs. He was given unusual honors. It was a celebrity's tour of Latin America—and it clicked. It will do U. S. aviation a lot of good.

I was one of those fortunate enough to be included in the small group of guests. There was Arthur Godfrey and you know who he is. There were Jim Kilgallen, the dean of the International News Service, and Gale Wallace, head of the South American desk of the United Press in New York. There was Bill Rickenbacker, Eddie's talented son. We comprised the group that Eddie took to see the presidents and other high officials of South American governments.

Then there were Bert Holloway, director of sales development for Lockheed Aircraft Corp., and Dave Kenyon, the Lockheed technical expert assigned to Eastern at Miami. There was Walter Hecht, of the public relations firm of Win Nathanson & Associates, New York, which handles the publicity account of the Brazilian State of Sao Paulo in the U. S. There was Brad Walker, executive v.p. of the Fletcher D. Richards advertising agency of New York, which handles the Eastern account.

EAL Folk. The remainder of the party of 24 were Eastern folk: Sid Shannon, who just got his 20-year pin as v.p.-operations (he joined Eastern in 1929 "for a year or two" to get experience), served as Vice President in Charge of Arthur Godfrey. There was Warren Moore, assistant secretary and treasurer of Eastern, an up-and-comer in the outfit and one who somehow managed to juggle the finances for everybody. There was Frank Mattix, manager of interline traffic for Eastern, who somehow got saddled with the tough baggage responsibility. And not the least of those present was Beverly Griffith, EAL's director of public relations who soon was dubbed the Mother Superior of the party.

Heading the crew was serious, engineer-minded Capt. Fred Davis, a very capable veteran. Second Pilot was popular Capt. Frank J. Bennett, a tall lanky Virginian. Third Pilot was Capt. G. T. Munoz, who had it all over everybody else because he can speak Spanish. Flight Engineer was E. L. Graham, Radio Operator was R. J. Miller, and the technicians were E. T. Rasmussen and W. Fruchting, all of Miami.

Then there were three birds who actually worked. They were Art Gray and Jack Newman, flight attendants, and Ray Mills, the EAL photographer at Miami, who never got a chance to rest anytime.

13,705 Miles. For the record the flight was 13,705 miles from Miami to Miami plus a couple of side-trips. The itinerary was San Juan, Belem, Sao Paulo, Rio de Janeiro, Montevideo, Buenos Aires, Santiago, Lima, Bogota, Caracas, Barranquilla, Panama, and Mexico City.

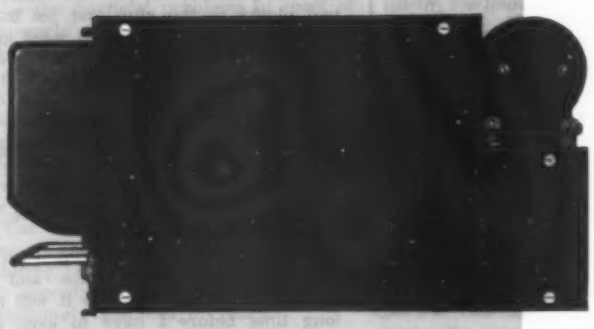
One outstanding record was established. Arthur Godfrey took a full-sized ward-robe trunk with him, to say nothing of a lot of other paraphernalia from recording apparatus to movie cameras. It will be a long time before I forget watching sweating baggage handlers pulling out that trunk at every stop. Godfrey soon was being called Don Arturo everywhere.

Another record was set with the Lockheed Constellation. I had better hurry up and call it a New Type Constellation which to anybody except Eastern is Model 749. Not a spark plug was changed, not a box of parts was opened up. The NTC (I almost called it a Connie which is tantamount to dismissal at EAL) functioned perfectly and magnificently without the slightest hitch. And at Bogota, Colombia, where the airport is 8,400 feet altitude, we established a new record in take-off for that height above sea level.

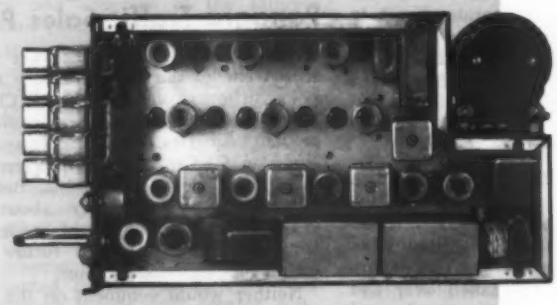
Most of the cruising was between 16,000 and 20,000 feet. It flew over the high Andes from Argentina to Santiago like a dream. Lockheed should be very happy about the trip because a lot of people got acquainted with it on the tour.

Mixing With Presidents. Somewhere in my notebook I have the names of all the presidents and high officials we

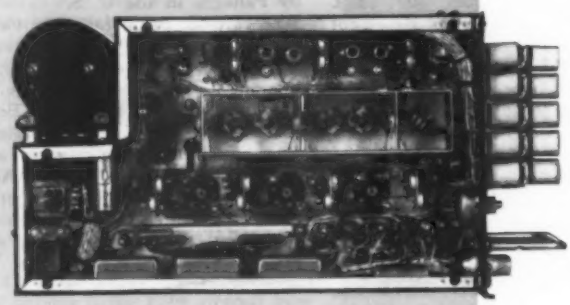
Bonanza DC-3— First photo of one of the DC-3's to be used by Bonanza Airlines when it inaugurates its Reno-Phoenix feeder route in November shows design and insignia on the company's transport. New insignia carries out the mining motif common to both Nevada and Arizona and consists of a miner's gold pan with crossed pick and shovel. The wide stripe of color on the side of the plane is tangerine, while the word "Bonanza" is painted in brilliant gold with black border.



51V-1 glideslope receiver, covers in place



Collins 51V-1 chassis (right side)



Collins 51V-1 chassis (left side)

Glideslope Receiver

51V-1

. . . inside and out

THIS is the new Collins 51V-1 glideslope receiver for aircraft. Note the orderly design, and the accessibility of all tubes, components, and wiring.

The 51V-1 provides reception of 90/150 cps tone modulated glideslope signals on any of the twenty channels in the uhf range of 329-335 mc. This receiver together with Collins 51R navigation equipment will fulfill ILS receiving requirements for military, commercial and private aircraft. The design of the 51V-1 is based on "Glideslope Receiver Characteristics" issued by Aeronautical Radio, Inc., and on U. S. Airforce specifications.

Output circuits of the 51V-1 receiver feed standard ID-48ARN deviation indicators including flag alarm. By means of the flag alarm the pilot has a positive indication of the reliability of the glideslope signals and instrumentation.

The 51V-1 control circuits are integrated with the standardized R/θ channeling system with channel selection provided by means of a Collins 314U remote control unit.

More complete information, in the form of an illustrated bulletin, is yours on request.

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called on. But suffice it to say that the presidents were in Brazil, Uruguay, Colombia, Panama and Venezuela. We didn't get to see Peron or Eva in Buenos Aires because of their absence from the city, combined with a cabinet crisis on the day we left.

U. S. embassies took care of formalities and many official functions all along the route. The National City Bank of New York was always on hand with assistance and social functions. We met many Americans with civil and military missions, or those connected with embassies.

The trip all started from an invitation to Capt. Rickenbacker by Governor Adhemar de Barros of the rich and progressive State of Sao Paulo in Brazil to visit him and help him out with his airline problems. The state owns the famed Vasp airline and had just taken over Aerovias Brasil which has a certificate to fly to the U. S. (de Barros may be Brazil's next president). Out of this invitation grew an entire Latin American tour. The $35,000 or so that it cost was well worth it in good will and without exception the U. S. embassy people hailed the tour as a genuine aid to U. S.-Latin relations.

Ground servicing was performed by airlines all the way around, chiefly by Pan American Airways affiliates. These included Panair do Brasil, Avianca, CMA in Mexico, and PAA itself. From Buenos Aires on up the west coast Panagra took care of things and went all-out to make the trip a success. Panagra even assigned one of its top pilots, Capt. Ernest Hummel, to assist Capt. Davis on the Andes flights.

EAL's Plans. Rickenbacker was asked a hundred times if he was planning to operate to South America. Throughout the entire trip he emphasized that he has no intentions whatever for operating into the Continent.

He has a certificate to Mexico City that is inoperative until the Mexico-U. S. bilateral air agreement is reached. His application to serve New York-San Juan is active. And early this summer he applied for an entire network of routes criss-crossing the Caribbean from Caracas on the east to Guatemala City on the west. But aside from Caracas, Barranquilla, and Bogota on the north coast of South America, and except for Central America and the Caribbean islands, he has no plans.

Rickenbacker avoided discussing airline matters on most of the tour. He promoted U. S. aviation in general, referred only mildly to other carriers (in contrast to his recent appearance in Washington), and kept on good will subjects. But the attention he received on the tour places him in a good trading position. South America is now aware of both Rickenbacker and Eastern.

High Stakes. Perhaps the keynote of the whole matter is the forthcoming struggle for control of Miami-New York traffic. The move of W. R. Grace & Co. (co-owner with PAA of Panagra) in buying some stock of National Airlines, the proposed interchange and trackage rights over National, the peculiar position of Braniff with relation to linking the eastern U. S. with South America—all of this and more is wrapped up in an extremely complicated package.

Eastern is looking out for its Latin American patronage which it may lose if PAA and Panagra operate direct to New York. The stakes in the game are high and the winning won't be easy for anybody. Eddie Rickenbacker played a trump card with his South American tour, but the game has just started.

But to get back to the tour.

Riots in Chile. One highlight which will long be remembered by all in the party was the rioting in Santiago, Chile. Students started the trouble because of a small rise in bus fares but before long the Commies had taken over and the riots were well on their way toward a full-scale revolution before the federal troops moved in and declared a state of siege.

A cocktail party had been set up by the National City Bank at the Union Club, several blocks from our hotel. Only a few of our group ever got there. Rioting began close by and Eddie Rickenbacker, Don Arturo and most of the others, got a block or two and had to retreat when bullets began whizzing by. The local police locked everybody up in the hotel for safety.

I had started out earlier in company with Bert Holloway, Brad Walker, Warren Moore and Capt. Fred Davis. We thought we'd be smart and take a back route. Instead of avoiding the ruckus, we ended up at a street intersection where the local police began clashing with about a thousand rioters who were trying to reach the presidential palace. Shooting began and what a racket it made.

The crowd began scattering and Holloway, Walker, Davis and myself crouched on the steps of the stock exchange building to avoid being hit by a stray bullet. Moore ran the other way and reached the hotel. How Holloway ever nosed me out of the corner position I'll never be sure of, but the order of the four of us snuggling up against the stone steps was as follows: Holloway, Parrish, Walker and Davis.

Whether this is the order of heroism or the order of strategic withdrawal, I can't remember, but for a few minutes all four of us wished we were in a nice cool bar in New York City. As soon as possible, we ran the remaining two blocks to the club and got inside, much relieved. About eight were killed that day and night and we didn't want to be among the missing.

Scenically the trip was superb. The Andes are terrifically impressive and we got a good look at Amazon jungles, volcanoes and lots of other things. It was winter at the southern end of the continent, but not too cold to be uncomfortable.

It was a good trip. It did a lot for intercontinental relationships and for U. S. aviation. But I hope it will be a long time before I have to keep pace day after day with the inexhaustible and the indestructible Rickenbacker. He wears a guy out.

No U. S. Plane Like Comet

Harold R. Harris, vice president and general manager of American Overseas Airlines, was quoted from London on September 7 as stating that the United States has no present aircraft to compare with the British-built de Havilland Comet jet airliner.

"The Comet is a first-class airplane," Harris was quoted in a wire service report, adding that British manufacturers have other airliners available which they should be able to sell abroad. The Comet 106, world's first jet transport, flew for the first time late in July.

de Groot and Craig Quit Panagra Traffic-Sales Posts

In combined resignations that represented one of the biggest airline traffic-sales turnovers in some years, Christopher de Groot, general traffic manager of Pan American-Grace Airways, and Nicholas C. Craig, sales manager, quit the company on September 1. Both had been with the company about nine years. Each announced his resignation from his home and said future plans would be announced later.

Neither would comment on the resignations, except that one indicated the move was deliberate and not hasty action. Both men are widely known in airline and travel circles, and together constituted virtually the entire top traffic and sales organization maintained by Panagra in the U. S.

Edward G. Bern, formerly vice president of sales for Peruvian International Airways which went bankrupt earlier this year, was later named sales manager of Panagra to succeed Craig. Before the war Bern was v. p. of American Airlines, handling public relations and sales promotion work. He left PIA shortly before the company ceased operations.

There was no indication from Panagra about appointment of a successor to de Groot.

CAB Grounds Own Planes

CAB has decided to ground its two transports and seven of the 15 single-engined aircraft used by its field safety investigators. Plans are to use the aircraft operating funds in different offices to avoid a reduction in personnel following a budget cut in its 1950 fiscal year appropriations.

The two transports, a DC-3 and a twin-engined Beech, had been used by Board members and staff on official business.

Hildred Outlines Program For Mass Air Market

The mass travel market that will make the financial problems of most of the world's airlines disappear will be found among wage-earners, particularly those of the United States, in the opinion of Sir William Hildred, Director General of the International Air Transport Association.

Sir William outlined this "incredible new market" in his annual report to the 30th anniversary meeting of IATA at The Hague Sept. 12, but warned that "because of our inability to keep on reducing fares in a time of rising costs, (it) appears to remain for the moment tantalizingly just out of reach."

Consequently, he added, the international airlines must continue to be dependent upon government subsidy "for a long time to come."

In his report on the state of the world air transport system, Hildred urged pursuance and adoption of the following six-point program:

1. More flexibility in the rate recommendations of the IATA Traffic Conferences in order to promote off-season and off-peak travel and take advantage of special events.
2. Utmost airline support for efforts to reduce and simplify red tape in customs, immigration and other border formalities.
3. Greater attention by airlines and governments to problems presented by new jet aircraft with higher speeds and greater altitudes.
4. Concerted effort to close the gap between the growing volume of international air transport and the development of airports, landing and navigation aids.
5. Multilateral agreement on air transport rights between nations instead of the present limited system of bilateral pacts.
6. Delegation of greater responsibility for actual operations by governments to the airlines themselves.

Progress Report. Reporting on the size of the industry, Sir William said IATA, which started out 30 years ago with six member companies having a handful of airplanes and a few hundred miles of routes, today has 70 members from 40 nations flying 2,500 aircraft over a world air network of more than 500,000 miles of routes. Passengers carried increased from 3,500 in 1919 to over 20,000,000 last year, he said, and the number of miles flown annually has increased from 600,000 to one billion. IATA members last year performed 12 billion passenger miles, 100 million ton miles of cargo and 250 million ton miles of mail.

"We are continuing to grow, and we are growing in the most sensible direction," Hildred told the approximately 200 delegates and observers attending the IATA general meeting. He pointed out that the airlines are now getting more payload out of the same number of planes and are handling more traffic with fewer employes than they had 18 months ago, indicating that efficiency is increasing.

Describing the United States as a particularly rich potential reservoir of mass foreign travel, he called attention of the airlines to this country's 20,000,000 families in the $3,000-$6,000 a year income brackets; to the fact that 80% of organized labor now get vacations with pay; and to the "astonishingly great extent of sentimental affiliations with countries across the water."

Dr. Albert Plesman, president-director of KLM Royal Dutch Airlines, was installed as the new president of IATA, succeeding Gilbert Perier, president of Sabena Belgian Airlines.

PAA Workers in Miami Break from TWU

A group of more than 150 employes of the 2,000 aircraft workers employed by Pan American Airways in the Miami area have broken away from the Transport Workers Union-CIO to form a new union called the Federated Airline Workers of America.

The secession was attributed to a fight which started last December in New York when Mike Quill, president of the Transport Workers Union, International, began a purge of alleged Communist leaders from the union. Quill had been unsuccessful in removing Miami local officers whom he charged with following a "100% Communist line." After unsuccessful attempts to bring the Miami local into accord with TWU politics, Quill suspended officers of the Miami local on seven charges.

William Grogan, TWU International-appointed Miami administrator, stated that Armand Scala, one of the suspended Miami officers, and one of the more prominent personages in the secession movement, had recently gone to New York City to confer with Maurice Forde, former high-ranking TWU official, who was removed from office in the Communist purge last December. Grogan said he had records of several long distance calls from Scala to Forde during recent months which were charged to the TWU office in Miami despite the fact that Forde was not a TWU officer at the time.

Miami labor sources said the new union hoped to obtain sufficient members to enable it to petition the National Labor Relations Board for an election to determine the future bargaining agent of Pan American system employes in the area.

DH Beaver Tours Alaska

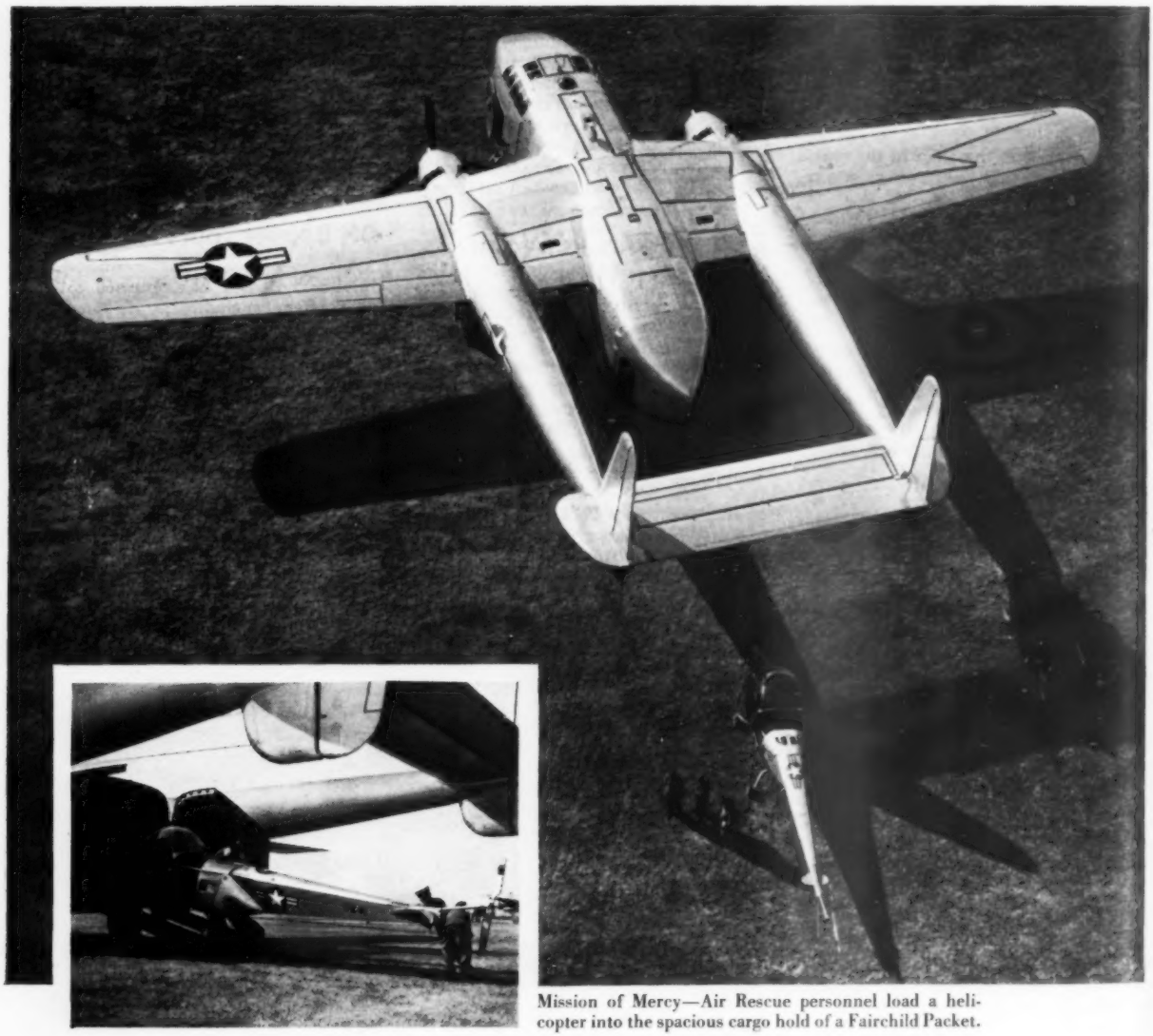
A seven-place float-equipped de Havilland Beaver has returned to Toronto after concluding a demonstration tour in Alaska. Charles H. Babb, president of The Babb Co., which recently entered into an agreement with the Canadian company to handle the ship in the U. S., reports average fuel consumption on the Beaver's 7,520 mile tour was 20 miles to the gallon. Average true air speed, cruising at 250 hp at 6,000 feet, was 126 mph.

The ship aroused high interest among bush operators, Babb declared, because of its unusual take-off performance on small lakes.

Mixed Power— The outboard engines in this Avro Lancaster bomber are Armstrong Siddeley Python turboprop engines with six-blade contra-rotating propellers. The bomber is being used as a test bed for the 4100 horsepower Python engines, Britains' most powerful turbo-prop. These same engines are being used on the Westland Wyvern naval attack aircraft. The inboard engines of the Lancaster are conventional Rolls-Royce Merlin reciprocating engines.

AIR RESCUE

Over faraway jungles, deserts and mountains, helicopters of the USAF Air Rescue Service have flown in search of stranded airmen and passengers. The helicopters got there because they have been given a "mother" ship—the Fairchild Packet—that transports them over distances far beyond their range. Thus, our Air Force has added a new ability to the versatile Fairchild Packet—increasing the importance of its part in the development of modern airborne military tactics.



Mission of Mercy—Air Rescue personnel load a helicopter into the spacious cargo hold of a Fairchild Packet.

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VA Rulings Improve G.I. Flight Outlook

New Veterans Administration rulings on eligibility of flight schools to continue their participation in the G.I. Flight Training program appear much less drastic than were indicated in original interpretations made by regional and district VA managers.

The first interpretations of Public Law 266 by field officials indicated that only those schools which had a bona fide enrollment of at least 25 non-service students for 12 months preceding Aug. 24, 1949, would be eligible to participate under the G.I. program. Had this interpretation held, many of the smaller flight schools would have suffered considerable financial loss.

When Wayne Weishaar, secretary-treasurer of the Aeronautical Training Society, called to the attention of VA officials in Washington the discriminatory nature of these rulings, VA Administrator Carl Gray sent the following telegram to regional and district managers:

"This minimum of 25 students is for application only in the case of the newly established institution and does not apply to the institution that was in continuous operation for the period of at least 12 months prior to Aug. 24, 1949, regardless of the fact that such institutions did not have a minimum of 25 students."

Exceptions for Winter. In a second unofficial ruling, the VA Administrator held that the "12 months continuous operation clause" would not apply to those schools which normally close operations in winter months because of weather conditions.

The new regulations state that instead of complete justification, a veteran planning to take G.I. flight training may submit to VA (1) a certificate in the form of an affidavit signed by him; (2) corroborating affidavits by two competent disinterested persons. The affidavits must show that flight training will be useful to the veteran in connection with earning a livelihood.

"Competent disinterested persons," VA explained, "means those qualified by reason of their personal knowledge of facts and circumstances to testify concerning the veteran's use of flight training in connection with earning a livelihood. Such persons also are to have no interest whatsoever, either personal or by association, in the pursuit or nonpursuit by the veteran of the desired course of flight training."

American-Delta Southern Interchange OK'd by CAB

The Civil Aeronautics Board on September 1 approved the southern transcontinental interchange proposals of American Airlines and Delta Air Lines, and the two carriers immediately announced plans for schedules that will cut from one to two hours off the present fastest schedules.

The approval, which will permit operation of through one-plane service between points on American's Route 4 west of Dallas and points on Delta's Routes 24 and 54 east of Dallas, is temporary and will terminate on the effective date of the CAB's decision in the Southern Service to the West Case.

Approval of the interchange was conditioned upon the following points: (1) that both parties comply, where necessary, with procedures set forth in the Railway Labor Act; (2) that both submit satisfactory evidence that there has been substantial standardization of types and arrangements of instruments and power controls; (3) that all schedules be filed 15 days in advance; (4) that no operations be discontinued without prior application to and approval by the Board; and (5) that all agreements modifying or supplementing the basic interchange agreement be filed for CAB approval at least 20 days in advance.

The interchange service will be inaugurated September 25 with one daily DC-6 round-trip flight between Miami and Los Angeles, one between Atlanta and San Francisco, and a third between Atlanta and Los Angeles.

Profits Continue in July

Although July traffic on most of the scheduled airlines was down some compared to the June peak, the favorable earnings trend of the second quarter continued on through July and probably also through last month.

United Air Lines, for example, continued operating substantially in the black with a July net in excess of $1,000,000 before taxes.

Capital Airlines, reported a July net of $254,161 and an increase of $400,000 in net working capital and $293,000 in current assets over the previous month.

Others still in the black included: Mid-Continent Airlines, with a July net profit after taxes of $43,638, as compared to a net of $18,633 for the same month last year; and Northeast Airlines, which reported a July operating profit of $123,578, as against one of $7,016 for July, 1948, and an operating profit of $19,331 for the first seven months of this year, as against a $786,047 deficit for the same period last year.

CAB CALENDAR

Sept. 15—(Docket 2953 et al.) Oral argument before the Board on Northwest Airlines, Inc. and Pan American Airways, Inc., applications for amendments of Pacific Routes. 10 a. m., Room 5042, Commerce Bldg., Washington, D. C.

Sept. 19—(Docket 3748) Hearing on proposed change of airports by American Airlines at Springfield, Mass. Tentative. Examiner Walter W. Bryan.

Sept. 19—(Docket 3722) Oral argument before the Board on Eastern Air Lines Puerto Rican Mail Pay Application. 10 a. m. Room 5042, Commerce Building, Washington, D. C.

Sept. 19—(Docket 2719 et al.) Hearing in Air Freight Tariff Agreement Case. Tentative. Examiner Herbert K. Bryan.

Sept. 19—(Dockets 3853 and 4032) Hearing on applications of American Airlines, Inc. and Colonial Airlines, Inc. for a New York-Toronto route. 10 a. m., Room 2015, Temp. Bldg. 5, Washington, D. C. Examiner F. Merritt Ruhlen.

Sept. 22—(Docket 1956) Oral argument before the Board on application of Mid-Continent Airlines, Inc. for an alternate Kansas City-New Orleans route. 10 a. m., Room 5042, Commerce Building, Washington, D. C.

Sept. 26—(Docket 3041 et al.) Hearing on application of Seaboard & Western Airlines for an international cargo route certificate. Tentative. Examiner Warren E. Baker.

Sept. 26—(Docket 3977) Hearing on proposed merger of Monarch Air Lines and Arizona Airways. Tentative. Examiner James Keith.

Sept. 28—(Docket 3965 et al.) Hearing in Parks Investigation Case. 10 a. m., West Ballroom, Shoreham Hotel, 2500 Calvert St., N. W., Washington, D. C. Examiner Ralph L. Wiser.

Oct. 3—(Docket 2796) Hearing in Hughes Tool Co.-Transcontinental & Western Air Control Case (Phase II). 10 a. m., Room of U. S. Commissioner, 520 U. S. Post Office and Courthouse Bldg., Temple & Spring Streets, Los Angeles. Examiner Edward T. Stodola.

Nov. 14—(Docket 2870 et al.) Hearing in Western Air Lines-Inland Airlines Mail Rate Case. Tentative. Examiner James M. Verner.

Aviation Calendar

Sept. 18-20—International Northwest Aviation Council annual convention, Spokane, Washington.

Sept. 20-22—Annual inspection, NACA Lewis Flight Propulsion Laboratory, Cleveland, Ohio.

Sept. 27-30—American Society of Mechanical Engineers fall meeting, Hotel Lawrence, Erie, Pa.

Oct. 3-8—20th Anniversary Convention, The Ninety-Nines, Waldorf-Astoria, N. Y.

Oct. 5-8—SAE 1949 National Aeronautic Meeting and Aircraft Engineering Display, Biltmore Hotel, Los Angeles.

Oct. 7-8—American Air Mail Society convention and exhibition, Edgewater Beach Hotel, Chicago.

Oct. 8—"Cradle of American Aviation Day" air show and industrial exposition, Roosevelt Field, L. I., New York.

Oct. 12-15—Air Reserve Assn. convention, Long Beach, Calif.

Oct. 13-15—Airport management and operations conference sponsored by University of Oklahoma and Southern Flight magazine, Norman, Okla.

Oct. 17-18—New York State Airport Management Conference, Hotel Syracuse, Syracuse.

Oct. 25-27—National Assn. of Travel Officials 9th annual convention, Cosmopolitan Hotel, Denver, Colorado.

Oct. 30—Third annual Air Fair, San Francisco Airport. (Junior Chamber of Commerce auspices.)

Oct. 30-Nov. 2—NASAO Annual Convention, New Orleans, La.

Nov. 9-10—Aviation Distributors and Manufacturers Ass'n annual meeting, French Lick Springs Hotel, Frenck Lick, Ind.

Jan. 13-15—18th Annual All American Air Maneuvers, Miami, Fla.

International

Sept. 17—IATA Executive Committee, The Hague.

Nov. 1—ICAO AGA Division meeting, Montreal.

Nov. 10—IATA COM Middle East.

November—IATA Traffic Conferences, Mexico City.

Between the Lines

By James J. Haggerty, Jr.

Air Reserve Confusion

Air Force veterans: Do you sometimes long for the familiar, clammy feeling of an oxygen mask pressed against your face? Do you get nostalgic when you hear a plane running up its engines? Do you miss banging your head, as you crawled through a fuselage, on the countless obstructions cunningly placed by a diabolic design engineer so that you couldn't possibly miss them?

If you do, the Air Force is offering a cure for your nostalgia—and the wonderful part of it is that you get paid while taking the cure.

There's nothing new about the Air Reserve. There has been one, in name at least, for quite a while. We say "in name" advisedly, for up to a few months ago, the program was little more than a paper in a Pentagon file, the actual operating end of it being hopelessly mired in confusion, lack of direction, inept handling and lack of funds.

There is something new about the revised program, for it appears that, for the first time, the Air Force has come up with a program that may be able to accomplish its end—to provide a trained reservoir of Air Force personnel for emergency integration into the regular Air Force.

Operational Bugs. To be sure, the program as it now stands is not a shining model of efficiency, as any one in it will tell you. Like any new airplane just starting its flight test program, the Reserve has "bugs." But, as in the new airplane, the "bugs" will be eliminated, for they are only operational defects and not flaws in the basic design.

One of these bugs is the confusion attendant upon getting the program started. Joe Doaks, Air Force veteran, decides he would like to get in the program. He hears somewhere that you should write to the numbered air force nearest your home. He does; and gets a reply stating that he should write for his reserve assignment to Headquarters, USAF, in Washington. He does; and gets a reply saying that he should write for his reserve assignment to the numbered Air Force nearest his home.

This confusion should be cleared up shortly. It stems from the fact that the Reserve records are being decentralized, that is, they are being sorted by geographical area and sent to the numbered air force controlling that area. Previously, all Reserve records were kept in the Pentagon.

Another bug is the lack of information about the program. All Air Force veterans realize dimly that there is some sort of Reserve. But frequently, you hear the question "How do I get into it? Whom do I write? Where will I train? Do I get paid?" At Air Force headquarters, they are aware there is a lack of information and are doing all they can about it, chiefly distributing press releases describing the program in detail. These releases do not go directly to the prospective Reservist, however; they go to newspapers which may or may not print them, or which may print very brief versions of them.

This bug, too, will be ironed out as soon as the records are decentralized, for then the numbered air forces will contact each potential reservist individually, describe the program to him and tell him how to get started.

Favors Officers Now. Then, too, there is the criticism that the program, as presently constituted, is primarily an officers program. Where there is a concrete system for officer promotions in the Reserve, based on a point system with a certain number of points for each session attended, there is no such plan for airmen. Airmen are not eligible for mobilization assignments; they can take only one of the several courses in the extension program. They are not entitled to rations or quarters during a training period. There are several other minor disadvantages to the enlisted man who wants to participate. The Air Force realizes this, too, and is looking for ways to make the program more attractive to airmen; for it should be obvious that a program which turns out all chiefs and no Indians is less than half a program. An indication of the lack of enlisted participation is found in the statistics on those who took their two weeks active duty up to July 1 of this year: 846 airmen out of 7,514 trainees.

There is some criticism of the locations of the training units. There are now about 130 locations: 23 Air Force Reserve Training Centers, which by some juxtaposition of the initials have come to be known as "Aftraks," and more than 100 regular Air Force bases which handle Reserve training. These locations were selected for two reasons: a sufficiency of potential Reservists in the area and the capability of the regular Air Force installation to provide the equipment, supervisory training personnel and facilities for the program. It is obvious that, within the limitation of funds, you can't open a Reserve unit at North Wippisink Falls where Joe Doaks and 83 other people live. You've got to generate enough interest in the program so that Joe will be willing to travel to the nearest unit.

The revised program has been in effect for about four months now. As

Martin Mercator— Designed for long, over-water patrols, mine laying and photo reconnaissance, the Martin P4M-1 mercator is powered by two reciprocating and two jet engines. A Pratt & Whitney Wasp Major engine is paired with an Allison J-33 jet in each nacelle. The Mercator uses the Wasps for normal cruising and the jets give extra speed for combat and quick takeoffs. Photo shows the first of 19 production models making its first flight at Baltimore August 31. The Mercator has a takeoff weight of over 80,000 lbs., top speed of more than 300 mph and a range of over 2,000 miles. The plane is 85 ft. long, has a wing span of 114 ft. and carries a crew of nine.

now organized, it is designed to provide some sort of training for 135,000 Reservists and offer active and inactive duty training pay to more than 75,000 of that number. The Air Force expects to spend about $82,000,000 during the coming fiscal year on this program, which, when fully effective, will provide the regular establishment with a reserve force of 25 groups, plus thousands of men not assigned to these groups who will be current in modern, operational aircraft. The program is not confined to flying personnel; it provides for the training of intelligence, supply, armament, communications, operations, engineering and mechanic personnel and all the other skills that go to make up the regular Air Force.

Program Details. For the benefit of those readers of this publication who have been idly considering joining the Reserve, we will list the details of the program here.

There are five separate divisions of the Air Reserves: the "Aftrak," mentioned above, the Corollary unit, the mobilization assignment, the Volunteer Reserve and the Extension Course Program.

There are 23 Aftraks scattered around the country. Twenty-five Reserve wings, consisting of five light bombardment and 20 medium troop carrier wings, have been established at these centers. The light bombardment wings fly Douglas B-26's (formerly A-26). The troop carrier units use Douglas C-47's and Curtiss C-46's. Rated personnel will get 90 hours of flying time annually. Aftrak members get 48 training periods per year (one week-end per month), plus a 15-day period of active duty during the year. The Aftrak program will train 10,000 officers and 26,000 airmen.

A Corollary Unit is a unit attached for training to a regular Air Force base. It might be a bomber wing or it might be a communications section. In a bomber wing, the members of the unit would be trained in the type of aircraft in use by the parent organization. For instance, there is a Corollary Unit with the 7th Bomb Group at Fort Worth, Tex., which operates Convair B-36's. The flying Reservists in the Corollary Unit then also train in B-36's. Training periods are the same as for the Aftraks—48 a year, or one week-end a month, since a period consists of one four-hour session. The Corollary program will train about 7,000 officers and 22,000 airmen.

Mobilization assignments are open only to officers. Actually a mobilization assignment is an assignment to a post the officer would occupy in an emergency. He takes "on-the-job" training with a regular Air Force outfit, and, with the consent of the commanding officer of the regular unit, may take as many periods a year as he wishes and may also take a 15-day active duty period on his assignment.

Pay Plus Points. Members of all three of the above classifications get paid for Reserve duty. Pay is at the rate of one day's base pay plus longevity in whatever rank the Reservist holds for one training period. Reservists cannot be paid for more than 48 periods per year plus pay for their 15-day active duty. In addition to the pay, Reservists in these categories accumulate points toward promotion.

The Volunteer Reserve consists of groups of Reservists who have the same Military Occupational Specialties (MOS) who meet at regularly scheduled assemblies for training in their particular specialty, lectures, etc. Volunteer Reservists get no pay, but one point for each meeting they attend.

The Extension Program consists of 75 courses, ranging from "Wearing of the Uniform" to technical courses on jet fighter aircraft, which the Reservist takes by mail. The Reservist does not get a choice of courses; he fills out an application stating his rank, time in service, type of work, experience, etc., and the Air Force decides which courses he is to take. The Extension Reservist is not paid.

Production Spotlight

Reduced Budget in '51: Air Force appropriations would be reduced $1.1 billion below present level in 1951 military budget now being worked on by defense officials. Overall military budget of $13.7 billions or $3.6 billions less than requested for fiscal 1950 is being considered. In addition to AF reduction, Navy would be cut $1.2 billion and the Army $500 million. Plans call for retention of the 48 group Air Force which could be accomplished on indicated allowances because contract authorizations carried in 1949 and 1950 budgets would still be in operation.

$30 Million for Canadair: *Canadair Limited has received a $30,211,190 contract for construction of 100 North American F-86 USAF jet fighters, according to announcement by Canadian Defense Minister Brooke Claxton. Delivery of first plane is expected by August, 1950. The jet was released by U. S. Government for manufacture in Canada, and a special license was issued allowing Canadair to modify it.*

Outlook Improved: **Douglas Aircraft** reports that the commercial outlook for the company is better today than at any time in the last two years. Douglas now has 18 DC-6's under construction, either on firm order or in negotiation. Officials are hopeful about the possibilities of the DC-6A Liftmaster, cargo version of the DC-6.

Lockheed Aircraft reported a net profit of $2,237,416 on total sales volume of $55,785,060 for first six months of 1949. Company delivered 215 planes during the period, with the Air Force getting deliveries valued at $32,828,673 (59%), the Navy $16,351,588 (29%), and the remaining $6,604,799 (12%) going to commercial customers. June 30 backlog was $202,268,000.

Consolidated Vultee Aircraft Corp. had a net profit of $1,585,327 for six months ended May 31, compared to net loss of $7,534,419 for same period of 1948.

Northrop Increases Wages: *Increases of 5 cents an hour, or about $8.65 a month, for all hourly-paid personnel and $10 a month for salaried personnel were put into effect by Northrop Aircraft at its Hawthorne, Calif., plant. Except for a small group of welders, Northrop has never had a union bargaining unit.*

New Products: **Stratos Corp.** a subsidiary of Fairchild Engine and Airplane Corp., has developed a new lightweight air conditioning unit, 65% lighter than industrial type units, for cooling planes on the ground . . . **Boeing Airplane Co's** Wichita Division has received a $1,199,464 Air Force contract for 16 new-type mobile bomb lifts for loading bombs up to 50,000 lbs. . . . **Boeing** is also testing a new single-point refueling system with a pressurized feed which permits plane refueling in about one-quarter the present required time.

Boeing Move: *The Air Force has decided to shift sub-assembly work on Boeing Airplane Co.'s six-jet B-47 bomber from Boeing's Seattle, Wash., plant to the company's Wichita Division, because of Seattle's "strategic vulnerability." Actual final assembly of the planes is not involved, since the decision from the start was to assemble the planes at Wichita. Although the "strategic vulnerability" is the main reason for the move, there were other contributing factors, chiefly the lack of adequate runways at Seattle and lower labor costs in Wichita. The production of Boeing's B-52, an eight-jet successor to the B-36, will probably also be handled at Wichita, although the plane won't be ready for production for at least four years. The decision apparently means that Seattle production will thin out with the end of the B-50 Superfortress work in 1951.*

—OPERATIONS-MAINTENANCE—

D. B. Hawkins, formerly supervisor of communications operations for Northwest Airlines' eastern region, has been promoted to the newly created post of supervisor of international communications, with headquarters in Minneapolis.

Alfred N. Musella has been appointed to the new post of assistant superintendent of stations for National Airlines for central and south Florida. He also will continue in his regular duties as station manager at Miami International Airport.

Jack J. Larsen, formerly station service manager for United Air Lines at Chicago, has been named chief of station ground services at Portland, Ore. The Chicago position has been filled by **Gilbert Henry,** formerly staff assistant at the Denver operating base.

David S. Boddie has been appointed station manager for National Airlines at Charleston, S. C., succeeding **H. L. Eddleman,** who resigned to go into business for himself.

Charles Zitek has been promoted from lead station agent to station manager for United Air Lines at Providence, R. I., replacing **Robert Delaney,** resigned.

Frits Besancon, KLM Royal Dutch Airlines' technical manager for the west coast of North America since 1946, has been appointed as head of the Production Directorate at the company's headquarters in The Hague. He joined KLM in 1935 and came to the U. S. as technical representative in 1938.

Francis E. Hembree, one of the original employes of The Flying Tiger Line, has been named station manager at Newark, replacing W. J. Gunther, resigned. **Bryson E. Replogle,** formerly assistant station manager at Detroit, replaces Hembree.

———TRAFFIC & SALES———

Robert C. Meserve has been appointed as manager of reservations and ticketing for All American Airways, succeeding **Warren W. Via,** who resigned to enter private business. Meserve previously served 13 years with American Airlines and a year with Capital Airlines.

Benjamin J. Berry has been named district traffic and sales manager for United Air Lines at Reno, where he had been acting district traffic and sales manager since last February. He has been with UAL since 1936.

Edwin F. Applegate, formerly cargo representative for Pan American Airways in New Jersey, has been named district sales manager for Pan American-Grace Airways in Quito, Ecuador.

Convair Engineers— J. W. Larson (left), chief engineer at Consolidated Vultee's Fort Worth Division, is shown receiving his 15-year service pin from R. C. Sebold, director of engineering for the corporation. Prior to joining Consolidated Aircraft Corp. in Buffalo in 1934, Larson worked as a designer for Curtiss Aeroplane and Motor Corp. Sebold has been with the company 19 years.

Edward J. Griffith has been advanced from supervisor of counter sales for United Air Lines in New York to manager of city ticket offices in Washington.

John W. Moore, formerly with the Port of New York Authority as traffic manager for air transport, has joined the sales staff of Slick Airways, with responsibility for business development in the New York area. He was formerly a transportation analyst specializing in air freight for the Curtiss-Wright Corporation of Buffalo.

Robert H. Peterson has been appointed superintendent of the New York City Office Division of Railway Express Agency, with which he has been connected since 1920. He was general agent —air express for New York City from 1946 until last spring.

James W. Weller has been promoted from cargo agent to ticket agent for TWA at Dayton.

Robert A. Johnson, former traffic and sales representative for Eastern Air Lines in St. Louis, has been appointed southern regional agency and convention manager with headquarters in Miami.

William R. Wood has been named city traffic and sales manager for UAL at Fort Wayne, succeeding **J. R. Kelleher,** resigned.

———MANUFACTURING———

Joseph J. Mehl, assistant secretary and assistant controller of Fairchild Engine and Airplane Corporation, with which he had been connected since 1942, has been released as a result of management reorganization. He was secretary-treasurer and a director of Eastern Air Lines before joining Fairchild, and before that had been treasurer of North American Aviation, Inc. He has not announced future plans.

George R. Hill, formerly of the certified public accountants firm of Lybrand, Ross Bros. and Montgomery, has been appointed controller of the Curtiss-Wright Corporation, succeeding **Raymond L. Ward,** deceased. **Les Neville,** former editor of Aviation Magazine, has been named assistant to **Robert Earle,** senior vice president and executive director of Curtiss-Wright's three divisions.

Jackson E. Beighle has been promoted to assistant sales manager for Sikorsky Aircraft Division of United Aircraft corp. He has been with the company three years, concentrating on military sales.

John H. Fite, formerly president of Aviation Maintenance Corp. at Van Nuys and an executive of Piper Aircraft Corp. since last March, has been elected a vice president of the company.

Colin A. Stillwagen, formerly controller of Ryan Aeronautical Co., has been promoted to director of material and contract administration. He will continue to hold his post of secretary. **L. L. (Jeff) Underwood,** who will take over direction of the controller's office, has also been elected assistant treasurer. **Walter O. Locke,** assistant to the president, will also be a special assistant to the executive vice president of Ryan Aeronautical.

Cliff Barron, formerly assistant secretary-treasurer of the Boeing Airplane Company, has been elected as vice president of the company and assistant general manager of the Wichita Division. **Clyde Skeen,** formerly chief accountant, was given Barron's former position.

Barron

Tom A. Murphy, formerly general manager of the Sikorsky Aircraft Division of United Aircraft Corporation and more recently director of purchasing with Republic Aviation Corporation, has been appointed assistant general manager of Republic, in charge of all manufacturing inspection and industrial relations activities.

John B. Shallenberger, sales engineer for Canadair, Ltd., Montreal, has been appointed assistant to the president.

Joel Robert Baker, Jr., has been appointed chief experimental test pilot for Chance Vought Aircraft. A former NACA engineering test pilot, he was the first man to fly Chance Vought's XF7U-1 Cutlass, twin engine fighter described as "the Navy's fastest."

Others in the News

Dr. John Joseph Green, since 1945 chief research aeronautical engineer of the Canadian Air Transport Board, Ottawa, has been appointed as deputy director general of the Defense Research Board and scientific adviser to the Canadian Chief of the Air Staff.

Neil Silsbee, managing editor of *Aero Digest* for the past several years, has resigned to become executive secretary of the Corporation Aircraft Owners Association. He also will do free lance writing.

Comdr. Alan P. Smith, USNR, has been elected secretary-treasurer and a director of Wing Engineering Corp., Baltimore. **Paul F. Gibson,** head of the aerodynamics section of the engineering department, has also been added to the board of directors. Commander Smith is experienced in airborne electronics. Gibson was formerly aerodynamicist at the Naval Air Experimental Station in Philadelphia.

Robert O. Kinsey has been promoted from assistant director to director of CAB's Alaska office in Anchorage, succeeding **Raymond W. Stough,** retired.

Brig. Gen. Tom R. Rives has retired as chief of the electronics subdivision of the Air Materiel Command at Wright-Patterson Air Force Base, Dayton, after 31 years in the service.

Lt. Gen. Benjamin W. Chidlaw has been named Air Materiel Commander, with headquarters at Dayton, to succeed **Gen. Joseph T. McNarney.** The latter has been named permanent "unity expediter" for the Department of Defense.

Seven New Directors For Hawaiian Airlines

Seven new directors of Hawaiian Airlines were elected at a special meeting held in Honolulu last month, after stockholders had voted to increase the number of directors from seven to 11.

The new directors are James Greenwell, Wilfred C. Tsukiyama, George H. Vicars, Jr., H. V. von Holt and Robert T. Williams, all of Honolulu; Robert von Tempsky of Wailuku, Island of Maui, and George S. Wong of Hilo, Island of Hawaii.

Alex Smith, elected to the board two years ago to replace Williams who resigned because of pressure of other business outside Hawaii, withdrew from the board to make way for Williams' return. Two other vacancies were created by the resignations of M. B. Carson and H. S. Tuner, both officers of Inter-Island Steam Navigation Co., Ltd., in another step toward divorcement of the two companies and elimination of interlocking directors.

Airline Commentary

By ERIC BRAMLEY

ANOTHER INTERESTING ITEM to show how aviation has developed. Ed Bauman, one of our aviation writing cohorts, sends us a copy of an ad that Thos. Cook & Son ran in September, 1927, on a "deluxe aerial tour New York-Chicago for the Tunney-Dempsey fight." It was, said Cooks, the "first public aerial tour." You would ride in "the most modern cabin-cruiser-type airplanes . . . equipped with every necessary passenger convenience, including comfortable chairs and observation windows from which to view landscapes, clouds and strange light effects." Take-off would be from Curtiss Field at 8 a.m., arriving Chicago "early the same evening." You would have choice ringside seats, stay at the Stevens Hotel, and leave early the next morning, arriving New York the same evening. The price of this trip? A mere $575, including everything. Today, even assuming 100 bucks for a ringside seat (and what fight would bring this price?) it could be done for less than half of $575, and in modern cabin cruiser planes, too.

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A gift box of figs arrived in Columbus, Ohio, recently on a TWA plane from Los Angeles. The only additional address was a man's name followed by six numerals, and the TWA agent was about to toss in the sponge. But suddenly he had an inspiration, and picked up the telephone. Yessir, he clicked on the first call. The figs were for an inmate of Ohio State Penitentiary.

•

Memo to Slim Carmichael, president of Capital Airlines: Please, please, Slim, don't shove those throttles forward. We're referring to that swell story about you in the *Saturday Evening Post.* Specifically, we're referring to that picture showing you in the cockpit, and from the looks of it, you're about ready to take off. But don't, because from where we're sitting it looks like the gustlock is engaged. So please, Slim, let's cancel.

•

Here's a man with a gripe. He signs himself "Transatlantic Traveler." We quote: "I flew to Europe and back recently and was shocked at the change that has come over Gander Airport. Gone is that glorious informality that used to prevail. Now that Canada has taken over Newfoundland, I noted the uniformed personnel and the big signs shouting out something about a $10,000 fine for something or other. You had to parade through a labyrinth of passageways and everybody felt like a criminal in a bullpen.

"But the payoff is the new dining room in the big terminal. At four o'clock in the morning, I craved corn flakes and milk, having been in Europe. We were to be fed a hot breakfast on leaving Gander, so I didn't want a full breakfast—just corn flakes and milk. The dining room was appealing—a headwaiter, a waiter and three waitresses, all standing around waiting for business. There were, by count, 116 places all set. But I couldn't get corn flakes and milk. Only a full breakfast. The whole thing was a comic opera—places set, personnel idling, but only full breakfasts and nothing else.

"Another thing: why don't the various airlines tell you about the coffee snack bar at Gander? On the way over I found out just before boarding my plane that I could have had a cold drink, or coffee, free of charge. On the way back, thinking I wouldn't miss out on the refreshments, I ordered coffee and had to pay for it. In neither case was a full announcement made on arrival at Gander as to what we, as passengers, were to do, whether we should eat, or what cooks. Why all this mystery? Why can't passengers be told the score?"

This passenger is mad. Does anyone have the answers?

•

On his first day on the job, Bill O'Hern wondered why his telephone never stopped ringing with people asking him if he was the new district publicity manager of United Air Lines in Los Angeles. When he said yes, they hung up. Then he learned the pitch. A Los Angeles newspaper was running a quiz contest in connection with a circulation promotion, and one of the yes or no questions was: "Is Bill O'Hern the new district publicity manager of United Air Lines?" Bill's only regret is that he can't claim credit for having been smart enough to plant the stunt.

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No Need for Turboprop:

Boeing Favors Turbojet For Transport Leadership

By William D. Perreault

Recently the Boeing Airplane Co. re-evaluated its position on jet transport design and in effect said, "This is it, these are Boeing's thoughts on the shape of things to come. These conclusions represent the results of extensive studies which point the way to efficient jet transport design. There are other possibilities, but here are the reasons why we think as we do."

The position taken was not exactly new. It was originally revealed in a book by Robert E. Hage of Boeing's engineering division which was published by Princeton University Press. This was the basis of the later Edwin J. Baetjer II Memorial Lecture and following this an IAS paper in July of 1948.

More recent revisions, with Boeing engineer Richard D. Fitzsimmons collaborating, bring the presentation up to date, accounting for experience gained by Boeing in building the record breaking XB-47. They reflect the operational experience which has since prompted the Air Force to contract with Boeing for the design of the all-jet, long range B-52 bomber, the plane that will eventually replace the Convair B-36.

The presentation is long and exacting but it boils down to this. Boeing feels that there is no need for going to turbo-prop power for future transports. The engines are too heavy, will require longer development periods and even then will not be capable of speeds promised by turbojets. The possibility that a suitable turboprop engine will be commercially available within two years "is not so favorable."

Rockets and Ramjets. While relatively little consideration is given to rockets and ramjet engines in most discussions of civil transports, Boeing does not ignore the potentials of these powerplants. In the early stages of evaluation they are very much in the running. But when fuel is considered, rockets become impractical at even moderate ranges due to high consumption. A rocket engine burns about 17 times as much fuel as the turbojet at mach 1.

Thrust comparisons at speeds above mach .5 indicate that the ramjet engine is promising, but at speeds below this value the ramjet will not sustain thrust. Landings and take-offs at practical speeds become impossible.

This leaves the turboprop and turbojet engines as strong contenders with final selection based on other factors. This is where basic engine weight becomes important along with fuel consumption. As shown in figure 1, at 1,000 mile range, the turbojet engine is outstanding. The relatively low powerplant weight permits the greatest usable load and insures flights at speeds of 600 mph.

Range Required. True, the jet engine at this time seems out of question

Hage Fitzsimmons

at a 5,000 mile range, but Boeing does not see the immediate need for such long range. Says Hage, "Large long-range airplanes like the Lockheed Constellation, Douglas DC-6 and Boeing Stratocruiser would still be required for transocean operation." (Recent successes experienced in flight refueling of airplanes might challenge this need.)

What can a jet transport with a 1,000 mile range do for domestic airlines? Boeing's studies show that such a transport will accommodate 90% of domestic passenger miles flown by the airlines. The average trip distance between major cities in the U. S. is 500 miles. A jet transport designed for a 200-1,000 mile range could provide efficient non-stop service for 50% of the total domestic traffic.

Since high speed is of greater importance on long flights, what is the situation for transcontinental operation? Even with two stops on a cross-country flight (fig. 2), block to block speeds of the jet transport would better the competitive designs. Effectively, this would bring another 35% of the passenger miles flown on domestic routes within the useful range of the turbojet transport and make is possible for one type of equipment to replace 75% of the airline equipment.

Economic Justification. The initial jet transports are going to be expensive. Boeing feels that "Government financial aid will be required to foster the development of any new transport. No American aircraft manufacturer is in a position today to gamble on the development . . ."

Actually there is a growing tendency in industry circles to feel that the airlines and manufacturers will be able to work out suitable financing. How can this be justified?

Procurement costs are considerably smaller than the accumulated, recurring, direct operating costs. The studies show that at block speeds above 400 mph, turbojet transports have the lowest direct operating costs and the highest profit potential.

Costs were based on a modified Air Transport Association formula assuming fuel costs per gallon to be 20% less than for reciprocating engines. The relatively high fuel consumption of turbojet engines leads Hage to suggest that

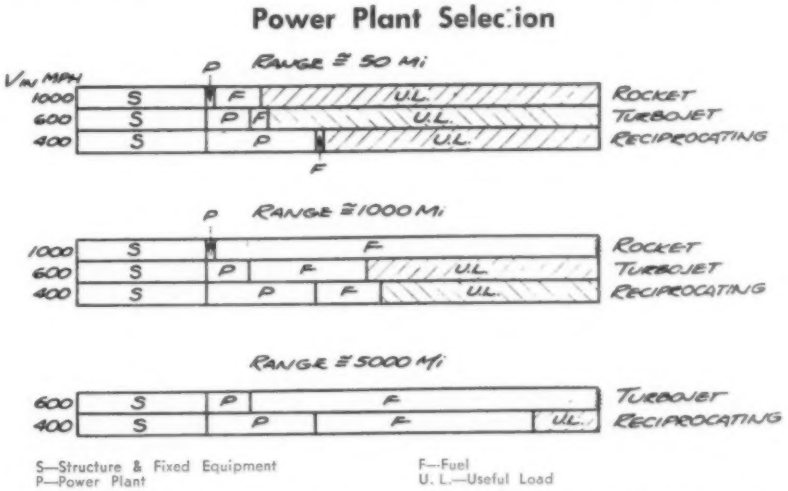


Figure 1—At 1,000 mile range, where one type transport could handle about 90% of U. S. domestic traffic, the turbojet is the most promising of powerplants considered.

Government is Key to U. S. Jet Transports—Beall

A statement by Wellwood E. Beall, vice president, engineering and sales, Boeing Airplane Co., regarding the jet transport development problem and the need for early action:

"The subject of jet power for commercial aircraft is becoming increasingly important. The emergence of a number of such aircraft under Great Britain's aircraft industry while there is no similar program in the United States, may well leave United States manufacturers, who have for years led the world in commercial aviation, in the position of having nothing new to offer the flying public in the next four or five years. Although Boeing, or other manufacturers with multi-jet experience, could have a prototype jet transport flying within 18 months of receiving a contract, to date there is no positive indication that any such contract—either commercial or military—will be forthcoming.

"It takes time to test a new airplane, to get government certification, to get the airplanes in production, to run customer tests and make deliveries to the air lines, to complete training of crews, and to get the airplanes into commercial service. It takes more time to do these things than it does to build the prototype and therefore, it is not only desirable but absolutely essential to our national defense and national economy that immediate steps be taken by the government to foster development and production of such aircraft. If nothing is done, if our government continues to 'coast' pending results of foreign tests, we may well lose our lead not only in this country but in world markets as well."

it might be worth the investment for oil companies to underwrite jet transport design.

Fewer Ships. One of the major factors, economically, is that it requires fewer airplanes of this type to service a given traffic potential. Operating within a 1,000 mile range, a turbojet fleet of 35 airplanes will handle one billion passenger miles annually at 60% load factor and with 10% spares while it would require 42 turbo-prop ships and 51 reciprocating powered aircraft. Boeing feels that trip frequencies will justify a 40-passenger cabin interior.

The smaller fleet will use fewer flight crews, and be subject to fewer mechanical difficulties (both by virtue of fewer engines and because of simpler design and less vibration). Less hangar space will be required and the lower number of airplanes will permit general reductions in personnel, office space, ground equipment, stocks, etc. Faster flights will also do much to eliminate the need for in-flight meals.

Safety Matters. Reliability and safety are two major factors affecting passenger acceptance of air travel. Even in their present state of development, turbine engines show promise of greater trouble-free service than reciprocating engines. One of the deterrents to jet engine operation, the fact that they require five times as much fuel as reciprocating engines, will serve to provide greater safety margins. In the event that an airport is closed in by weather, the jet transport will be able to travel to a more distant alternate within the 45 minute plus 200 mi. reserve period.

Use of kerosene type fuels will minimize fire hazards, thus increase safety of operations. Because of their high speeds, these transports will be less affected, percentage-wise, than other aircraft when they encounter strong head winds. This should work toward improved schedules.

New Comfort. The limited passenger compartment areas of present day transports finds the passenger on long flights uncomfortable and bored by the ride. The longer the flight, the more intense the condition. The high speed of these airplanes, traveling across the country in some six hours, will sharply reduce traveling time, improve traveling conditions.

Lower noise and vibration levels will also contribute to increased comfort as will reduced gusts at the high operating altitudes of the jets. Swept-back wing designs will also aid in relieving the effects of turbulence and resultant passenger discomfort.

Problems. "If the United States is to maintain leadership in the world in the design of transport aircraft the development in the near future of a turbojet type is mandatory," said Hage. There are obstacles. Cabin noise levels are dependent on improved jet exhaust systems; higher pressurization for flights at 40,000 ft. will require special attention. Fuel consumption during ground maneuvering will be critical and may require separate power and wheel drive mechanisms for this purpose.

While there are no major difficulties in design (Boeing designed, built and flew the XB-47 in 18 months) "there are major difficulties in the fields of certification, financing and development of air traffic control procedures." For these reasons it may be five years before a jet transport could be available for civil operation.

With these thoughts in mind, it is imperative that U. S. manufacturers have definite plans on which to base recommendations to the airlines when financing does become available. It would seem that Boeing has established this readiness.

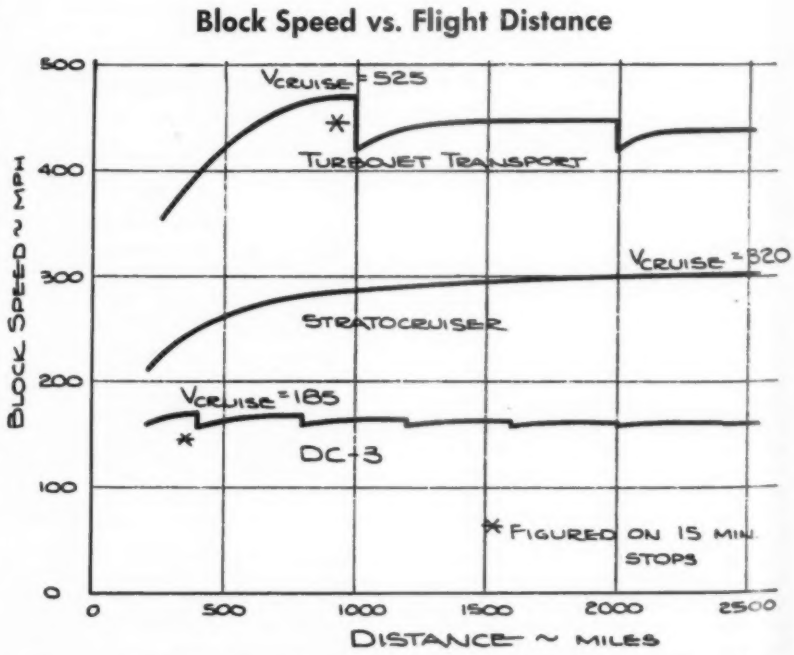


Figure 2—For the transcontinental traveler, representing 35% of domestic airline travel passenger miles, the turbojet-powered transport would be an efficient vehicle.

Incentive Bonus & Planning Cuts BEA Shop Time 74%

Last year it took British European Airways about 2300 manhours to complete a number 4 check on a Viking airplane such as used on their continental routes. In eight months, the time for this check has dropped to 600 manhours, 26% of the original expenditure.

Some of the change was due to planning operations ahead of time. Studies show that planning accounted for about 9% of the improvement. The real time savings resulted when Hugh Gordon, BEA's divisional maintenance engineer, introduced the bonus incentive plan. With Gordon's plan in operation, time for the same check was reduced to 900 manhours almost immediately. As time progressed it finally dropped to 600 manhours.

Gordon

The 74% reduction in manhours for one given check was remarkable but this wasn't the only benefit gained from initiation of the bonus system. At BEA's Northolt base, the manpower was reduced by 296 persons. Two hundred and five of these employes were direct maintenance workers and 16 were indirect maintenance personnel made unnecessary by improved performance. An additional 75 were made surplus by simpler shifts and changes in maintenance check periods.

During the same period British European Airways has increased flight time on the fleet by 25% but this was accomplished with 75% of the previous year's manpower. Each mechanic produced 66% more flying hours than previously.

The bonus incentive plan used by BEA is quite simple in operation. In preparation for the program, the maintenance department established fixed time increments for maintenance operations on aircraft, aircraft components, engines and fittings, repair operations on standard components and any other operations of a repetitive nature where, by experience, the scheme is found applicable.

This assessment was a net time for completion of the project as determined by informed ratefixers. Thirty percent additional time is added to the net figure to provide a cushion for normal contingencies. The mechanic is expected to complete the operation within the total time allowed but there is no penalty for the slow worker.

Gets Half of Savings. If the mechanic completes the operation in less than the total time allowed, he is given a bonus. The bonus represents payment for ½ of the time period saved by the workers efficiency. Thus, if a specific task is given a net time of 10 hours, total time for completion is 13 hours. By completing the operation in 10 hours the mechanic receives his basic rate plus pay for ½ the time saved, 1½ hours additional pay.

The system requires that mechanics use a time clock to punch a work card at the beginning and end of each job. Although individual bonus awards are favored, group awards are made on a pro-rated basis when the nature of the assignment does not permit individual bonuses.

Even though the mechanic does not complete the operation within the total time provided, it does not affect his basic rate. Time spent in excess of the established total in no way affects his earnings or bonus on succeeding jobs. In the event that the mechanic is held up by the lack of an assignment, waiting for drawings, tools, or instructions, a bonus of about 5c per hour over his basic rate is granted for such time.

Management Benefits. Both the mechanic and management benefit. There is incentive for the mechanic to complete the task in the minimum time. There is incentive for management to keep the work loads constant so men will not be idle. This generally improves procedures and results.

The natural tendency is to feel that such a system requires too elaborate a bookkeeping system. It might even be conceivable that the additional staff required for indirect labor would offset any benefits. BEA's experience shows that 33 additional engineers were required and 20 additional clerks as a result of the bonus incentive plan and related rate fixing. This still resulted in a net reduction in personnel of 243 people.

One of the major obstacles to such a program is laying out the assessment of net times for the individual projects. It is interesting to note that United Air Lines and Pan American World Airways have already assigned time elements to all repetitive maintenance and overhaul functions at their overhaul basis. It would be a relatively simple step to adopt a bonus incentive system.

It might be expected that the labor unions would object to such a plan on the basis of possible unemployment which might result. Such a plan is not contrary to labor agreements since it merely establishes minimum rates to be paid workers. Since this plan simply provides a bonus above basic minimums it would not appear to present direct complications.

Stratocruiser Training Program Started by UAL

United Air Lines has started at its San Francisco maintenance base an extensive training program for more than 600 specialized employes who will service and operate the seven Boeing Stratocruisers UAL has on order.

Preliminary to actual experience with the aircraft, more than 33,000 hours have been allotted for classroom study of cockpit mockups, cutaway models, photographic enlargements and wall-size charts and diagrams. Flight instructors and test crews will familiarize themselves with the plane at Boeing's Seattle plant and then return to San Francisco to instruct flight and ground crews.

Second officers will receive 235 hours of training, both classroom and grounded plane, plus eight hours of cockpit study and 20 hours of test flights. Captains and first officers are set for 70 hours of classroom instruction, eight hours of cockpit study and 20 hours of flight.

Courses for engineers, production planners and supervisors range from 24 to 56 hours. Training of UAL maintenance workers in Honolulu will begin in October. United will use the Stratocruisers on the California-Hawaii route.

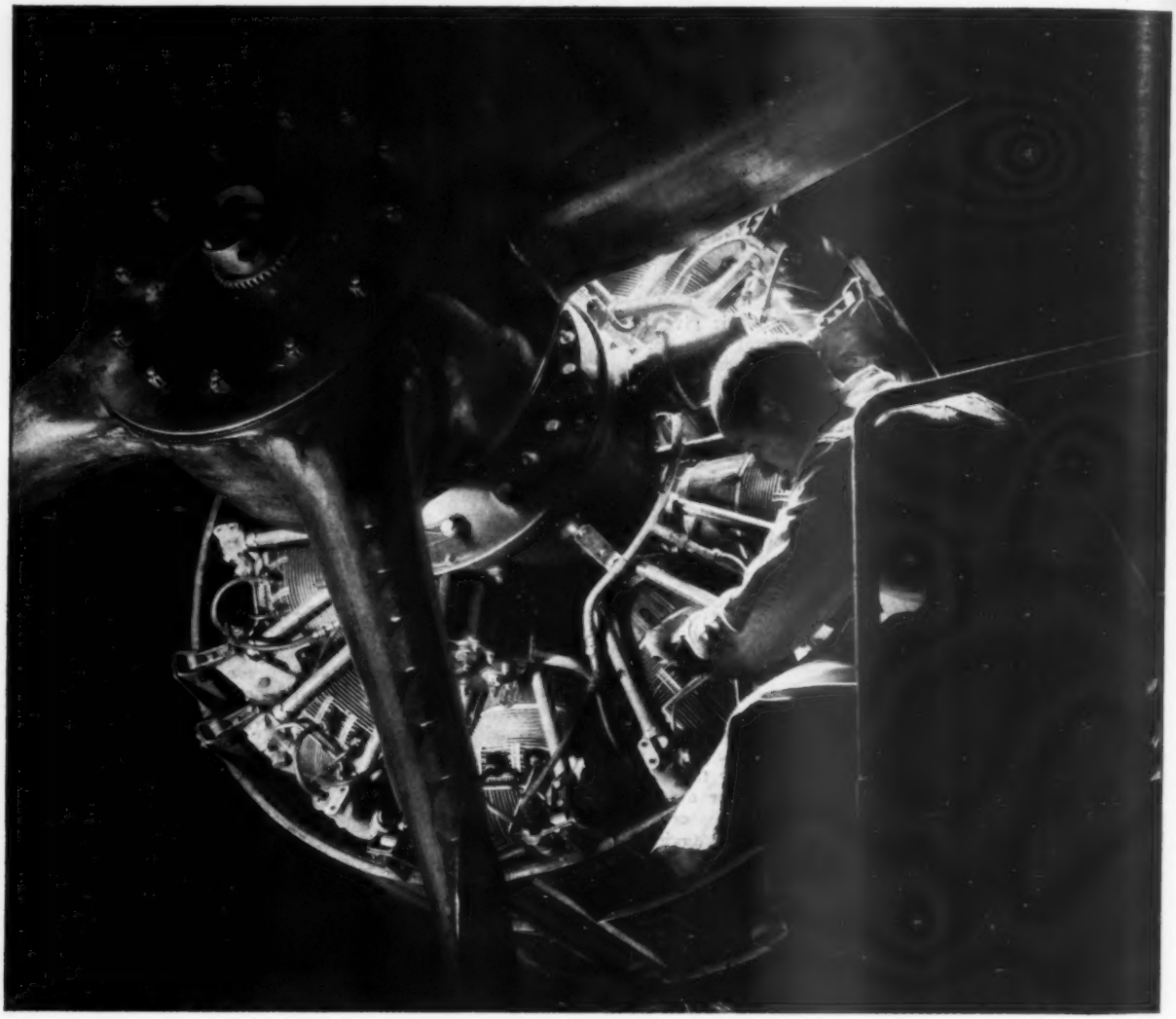
Transocean Gets Contract With Pakistan Airline

Pak-Air, Ltd., which has been operating domestically in Pakistan, will shortly make its entry into the international field, according to Transocean Air Lines, which has a contract to provide flight crews and key operations and maintenance personnel and also for the maintenance and overhaul of the aircraft for the operation.

The first of two DC-4's with which Pak-Air will start has arrived in Karachi after being flown from Aircraft Engineering & Maintenance Co. at Oakland, Calif., where it was modified and overhauled. Upon its arrival it was to go into service assisting in the mass flying of more than 1,000 Moslems in a modern pilgrimage to Mecca. Pak-Air's international terminals will be London and Singapore.

AAA Mechanic Agreement: All American Airways, has entered into a wage contract with the International Association of Machinists covering their 80 mechanical employees. Rates established under the contract are: inspector, $2.03; lead mechanic, $1.95; mechanic, $1.86 and ground communications technician, $325 per month. The rates are retroactive to May 1.

OPERATIONS-MAINTENANCE



FINAL REHEARSAL BEFORE THE TAKE-OFF!

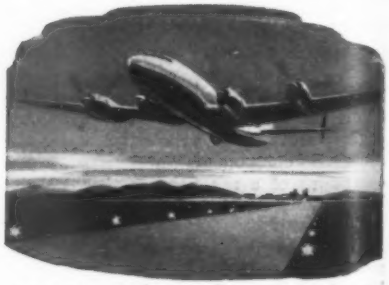
► This is the final rehearsal of a new Wright Cyclone before taking to the air.

► It has already passed through five preliminary stages... (1) *green* or first assembly; (2) *green* 5-hour stationary test-run; (3) complete dismantling and cleaning; (4) parts inspection; (5) parts reassembled into "final" engine.

► Now in its final test, sensitive recording instruments *check* and Wright technicians *log* the engine's operations from idle to take-off power. A calibrated wooden test club on the propeller-shaft absorbs power developed and forces cooling air across the engine.

► The hundreds of log-sheet entries include data on every phase of engine performance. Every Wright Cyclone passing the "production engine" test is ready to power *any* commercial or conventional military airplane in the world.

► Another example of the care with which the Wright Aeronautical Corporation produces aircraft engines to provide reliability in the air.



POWER FOR AIR PROGRESS

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Anti-Skid Device Aids Landing Roll

Hydro-Aire, Inc. will be prepared to go into production early this fall on its new anti-skid safety control, according to J. H. Overholser, vice president-engineering of the Burbank, Calif. hydraulics and components manufacturing company. Meanwhile, several aircraft manufacturers have started making arrangements to test the automatic brake attachment on their planes.

Developed by the Boeing Aircraft Co. over a three-year period, the anti-skid device has been turned over to Hydro-Aire for manufacture and distribution because of the latter company's signal success in the production of special valves. A set of the Hydro-Aire valves has been installed on a Boeing 377 Stratocruiser for demonstration to the airlines.

The anti-skid control, which Overholser describes as an "automatic brake brain," is regarded not only as a distinct contribution to aircraft landing safety, but it will make it possible to land on shorter fields with any type of runway regardless of pilot technique. In addition, it is calculated it will increase tire life up to as much as 1,000% and simplify maintenance.

The braking problem has been accentuated as airplanes have become progressively larger and landing speeds higher. Reversible pitch propellers have been a big help in cutting down landing runs, but their greatest efficiency is retarding speed at the higher speed levels, 70 mph and above. Sensing tire skidding during the landing roll is extremely difficult and the only method pilots have to try to avoid it is by trying to "feel" their brakes. Consequently, they may be over-cautious, thus increasing minimum runway requirements, or they may overbrake, causing a locked wheel condition and considerable burned rubber, or even tire failure.

Cuts Tire Wear. Hydro-Aire's anti-skid control takes this pressure off the pilot. It is an automatic brake control system which reduces the landing roll to near the theoretical minimum regardless of pilot skill and keeps tire wear to a minimum. Braking efficiency approaching 99% and stopping distances as little as 3% greater than the design calculated minimum have been achieved by use of the control. Generally, a 30 to 50% reduction in stopping distances is attained, depending upon whether the aircraft is powered by reciprocating engines or jet engines. The device instantly compensates for such variable conditions as wet, muddy or ice runways, tire pressure or wear, weight or speed of plane, and pilot landing technique.

Automatic control is individual to each brake wheel, thus making it possible to obtain maximum non-skid braking regardless of the variations of runway coefficient of friction and wheel loading for the individual wheels as the airplane proceeds on its landing roll. With the control system "on," the pilot retains full control of the brakes up to the point of causing the tires to skid. At this point the control system begins to function. It prevents locking of the braked wheel in the event excess brake pressure is applied by the pilot.

The system releases and reapplies pressure for smooth, even braking. As long as this pressure continues, the control system will cycle the brake pressure off and on at a frequency of about two cycles per second. Brake drag remains at close to its non-skid value during the partial or non-locked skid condition due to the brake pressure release time lag.

Components of System. Hydro-Aire's system consists of a wheel skid detector, a control box, a specifically designed, solenoid-operated, three-way hydraulic valve, and a pilot's control panel. Briefly, this is the way it operates:

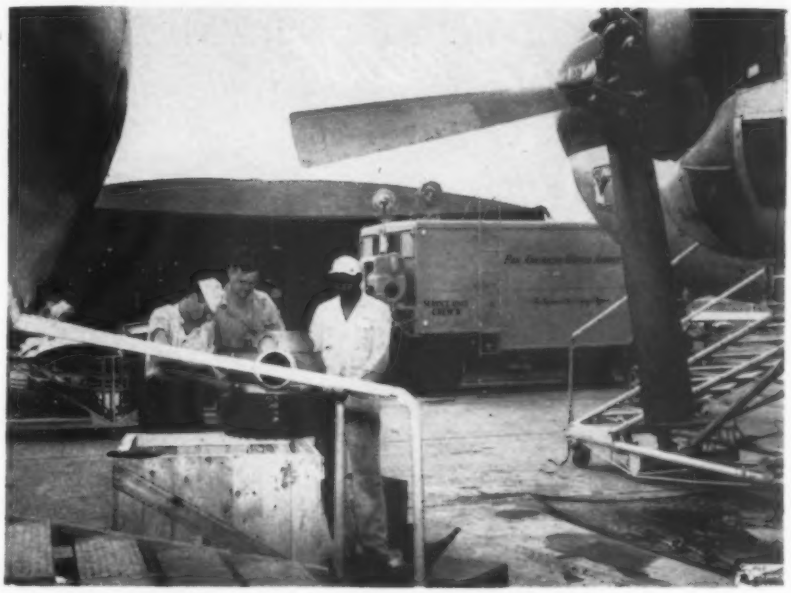
As the braked wheel decelerates in the incipient skid condition, the skid detector transmits a skid signal to the control box which in turn closes the circuit to energize the solenoid-operated three-way valve. The solenoid valve being energized, releases the brake pressure and allows the wheel to recover synchronous speed. As the wheel accelerates to full speed, the skid detector transmits a recovery signal to the control box which over-rides the skid signal time delay and de-energizes the solenoid valve, thus re-applying the brake pressure metered by the pilot.

The control box incorporates a time delay device which will give a steady signal for approximately 0.15 seconds even if the detector signal is momentarily interrupted. In case the recovery circuit in the skid detector is not closed when the wheel recovers synchronous speed, the brakes will continue to be released for 0.15 seconds after the skid signal ceases.

A "fail-safe" system is incorporated in the control box to insure that any electrical failure or short circuit will not cause the loss of braking. In such event, the control box will cause the solenoid valve to be de-energized within 1.25 to 1.75 seconds, thus restoring full control of the manual braking system to the pilot at the control panel.

Life tests have been conducted and the system is described as having a proven life in excess of 10,000 flight hours. All components have been tested and proven reliable over the ambient temperature range of minus 65 to 160 degrees F, and the operating voltage range of 18 to 30 volts D.C.

The system can be applied to any type of aircraft with any type of hydraulic brake now in service or currently being manufactured. The Air Force has approved the attachment for installation on Boeing's B-47 jet bomber.



Maintenance at Idlewild—A Pan American Airways mechanic force of more than 100 men works from this tent base on the inactive runway F at New York International Airport, performing "transit" services—the maintenance check given aircraft when they are not scheduled for any other kind of service. Number one services, given automatically after the Stratocruisers have completed 50 flight hours on either the New York to London or Bermuda runs, are also given here. Heavier maintenance is performed at LaGuardia Field.

Northeast Airlines has taken delivery of a new Convair-Liner ordered to replace one recently damaged and bring its Convair fleet back up to five planes.

the one bookkeeping machine that speeds and saves on all modern transport accounting records

The alert executive today is conscious of the need for reducing all costs. And this new Remington Rand bookkeeping machine is designed to *cut administrative costs.* It eliminates operator waste motion and lost time by producing *all* the accounting records you need—more efficiently and more economically than ever before. Here's how:

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BOOKKEEPING MACHINE

Extra Section

By William D. Perreault

ACCORDING to Sam Davis, American Airlines' supervisor of safety education, AAL's new training program, to reach all the employes on items of current importance, is bringing about splendid results. American is making wire recordings of material designed to drive home the importance of such things as on-time performance, safety, etc., and is distributing these to domestic and foreign stations where they are presented to all employes. A suggested format for the station program takes between one and two hours with the day's lesson applied to local operations through talks and discussions. The first recording, "Flagships On-Time" provided a dramatic account of what shippers, passengers and others feel about schedule reliability.

•

According to Lockheed Aircraft Corp., in a period of six months 2,000 items handled by that company have had price changes with the result that the "over-all average price" has been reduced by 1.6%. The savings, which have been passed on to customers, are in parts handled by Lockheed as well as those manufactured by Lockheed.

•

North-West Airlines, Ltd., Isle of Man, has started operating DC-3's which have been modified to carry 32 passengers. Seating is arranged with double seat units on each side of a narrow aisle with eight uniform rows in use. Aisle width is 12 inches at knee height and 16 inches at hip level. The seats are open framed at the base permitting some "stretching" of weary legs and keeping total dual seat weight to 30 pounds.

•

While airlines were flooded with applications for flight engineer positions immediately after the war and following the issuance of CAB crew manning regulations, it is interesting to note that at least one major airline has recently advertised for flight engineers and another, United Air Lines, has hired six flight engineers directly out of the flight engineer course of Spartan School of Aeronautics, Tulsa, Okla.

•

Anticipating that the shortage of trained pilots may prove an obstacle to future commercial airline operations in Great Britain, a special committee assigned to study this problem has suggested that RAF pilots be trained for and licensed as civil pilots while still in service. State scholarships for training commercial pilots were also recommended. Pilot replacements among the entire group of British airlines indicate the demand for pilots this year at only 251 and only 385 through 1957.

•

Communications personnel must be particularly talkative about the improvements in teletype services and parallel fields. This is the only way in which we can account for the releases which reach our desks on a clock-like schedule telling how each airline has just installed the newest equipment on the largest communications network among airlines, with the greatest capacity, etc. Such releases are exceeded only by "news items" on the "first shipment" of 2,301 baby chicks from here to there.

•

In The Journal of Aviation Medicine for August, Dr. Birger Hannisdahl of Oslo, Norway discusses factors affecting "Maximum Flying Time for Air Crews." Hannisdahl describes the many factors which must be included in any reasonable summation of pilot fatigue, exclusive of hours spent in actual flight. Typical of his considerations are the time of day in which the flight occurs (an additional 25% time allowance for time from 0600 to 0800, 50% for time from 0400 to 0600, etc.), number of stops per flight, type of sleeping accommodations at layover points, plane type, general weather conditions, etc. He points out that SAS is carrying on a program of health control of the crew before the start of long-distance flights and BOAC has a similar program following long distance flights.

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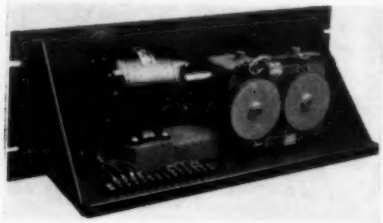
NEW PRODUCTS

Identification Keyer

Wilcox Electric Co., Inc., Kansas City, Mo., has developed an automatic identification keyer, their type 37008, a motor driven switching device which operates the keying circuit of a radio beacon transmitter.

The unit is mounted on a steel chassis attached to a standard 7 x 19 in. relay



rack panel. Two cam discs, which mechanically operate electrical switches providing identification characters and duration of beacon signal, are driven by a motor through a completely enclosed, lubricated gear reduction box.

Identification characters are readily established by adjustment of the 45 removable sections on the cam discs.

Paint Striper

Universal Marine & Mfg. Corp., 137 Alexander St., Yonkers 2, N. Y., is marketing a gravity feed paint striper for airports, terminals and hangar use. Two models, one with five gallon supply tank and the other with a nine gallon supply, both feature a brushless, gravity feed, sled-type paint spreader. With a special shoe it is possible to apply reflective paint. The gravity feed design eliminates engine, compressor and

pumps, and insures quiet, dust-free operation. Interchangeable spreaders permit use of a varying paint stripe width. Paint fed by gravity passes through a distributing apron and to finger rollers which spread it on the pavement. The brush is offset to provide ease of operation.

Accessory Kits

Aircraft Tools, Inc., 2306 E. 38th St., Los Angeles, Calif., has announced three sets of accessory tools for use with Huck Lockbolts.

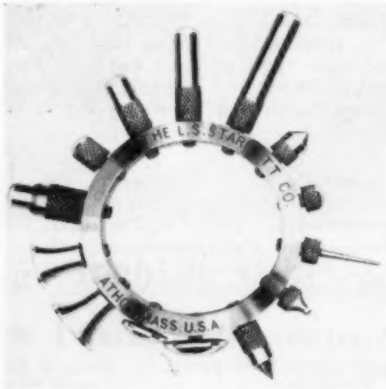
AT-59OD Inspection Kit, to aid in checking the installation of aircraft type Huck Lockbolts, contains a grip gauge, engraved scale and two sets of pin and collar gauges.

The Huck Lockbolt Collar Removing Kit. **AT-59OB,** contains a Micro-Set Stop-countersink, three interchangeable guide collars and three cutting tools. Used for removing 3/16 and ¼ in. diameter Lockbolt collars and structural blind rivets.

AT-59OA Huck Lockbolt Master Kit contains the entire collar removing set plus four countersink cutters. These cutters are specially designed for installing aluminum lockbolts in 75ST material.

Point Selector

The L. S. Starrett Co., Athol, Mass., has introduced a dial indicator point selector which provides a complete selection of 14 frequently used interchangeable contacts for use with dial indi-



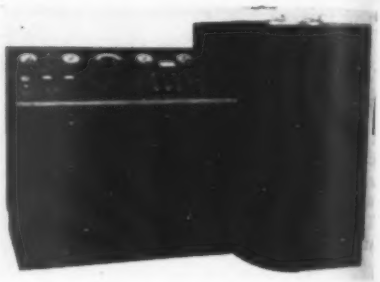
cators. The points are equipped with a 4-48 mounting thread and fit into holes on a lightweight aluminum ring with each contact identified by size or number stamped on the ring. Includes a range of four standard 13/64 in. dia. points, ¼ in., ¾ in. and 1 in. long; 9 special shapes for measuring in holes or restricted places or for gaging on small, resilient or rough surfaces. Price, complete with ring and 14 points, is $11.50.

Inquiries about equipment on this page may be sent either to AMERICAN AVIATION or direct to the manufacturer.

Readers looking for sources of special equipment are invited to write to AMERICAN AVIATION's equipment editor. Every effort will be made to provide information on manufacturers and suppliers who are in a position to furnish or develop needed airborne or ground equipment.

Governmatic

Greer Hydraulics Inc., 454 18th St., Brooklyn 15, N. Y., is in production on a redesigned and improved Governmatic for use in testing all electric and hydraulic governors including reversing and double acting types. Essentially the same unit as now in widespread airline use, the new Governmatic features



a larger cabinet, more power provided by a bigger variable speed drive and larger feather pump circuit, higher pressure and wider range. Governor test time has been reduced to 10 minutes through use of the 7½ horsepower drive, and installation of a 2 hp motor of 3 gpm capacity in the feathering circuit in place of the ½ hp motor of ¾ gpm capacity as formerly used. Operation is simple and may be done with a minimum amount of training.

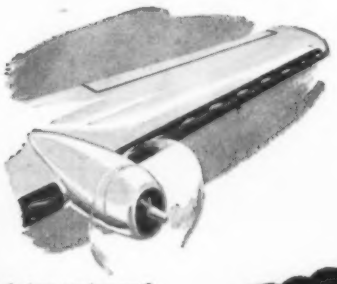
Flexible Couplings

Avico, Inc., Box 1090, Portsmouth, R. I., is marketing a series of flexible pipes and pipe couplings in all sizes for aircraft and industrial applications. Avico's Integral Angle coupling fits in

tight places, eliminates sharp hose bends and reduces installation time. Picture shows a small coupling used on Pratt & Whitney jet engines and the company's largest—a Reusable coupling for Delmar Hose for The Tide Water Oil Co.

Aircraft Inverter

Eicor, Inc., Chicago, Ill., is marketing two inverters for aircraft use. One is an electronically controlled inverter with 26-29 volt, DC input, 115 volt, 400 cycle output. It is rated at 1500-2500 volt amps. Voltage is controlled within plus or minus 1% and output frequency within 1½% range. Another new inverter by Eicor operates on 26-29 volts DC input and delivers 115 volt, 400 cycle output with frequency maintained within plus or minus 2½% by means of a centrifugal governor.



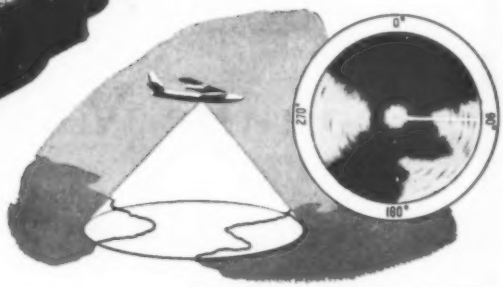
r de-icer equipment?

Vacuum for air driven instruments?

764

Vacuum for aerial camera installations?

1511



Pressurization for airborne radar systems?

What are *YOUR* Air Pump Requirements?

Do your plans call for dry air, remote location, light weight and compactness? If they do, the Eclipse 1511 Dry Air Pump is the perfect answer. Operating on its own sealed-bearing power source and functioning smoothly with *no* lubrication in the pump chamber, it is the ideal source of *dry* air for pressurization of airborne radar systems or vacuum for aerial camera installations. For general use, such as the activation of de-icer boots and air driven instruments, choose the performance-proven Eclipse 764 Engine Driven Air Pump. But, whatever your needs, you can always be sure of real dependability by specifying Eclipse.

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AIRPORTS

Charleston Expands Airport Facilities

With a recently completed handsome administration building, new high intensity runway lights, and three 7000 foot runways, the 2000 acre Charleston, S. C., Municipal Airport is now one of the largest and best equipped international type airports south of New York.

During the war the field was taken over by the Army. Approximately 800 acres and other improvements added by the government when the field was an army air base now are the property of the city of Charleston.

Located about half way between New York and Miami, it is an ideal location for an operation or servicing point for aircraft along the coastal airway. The airport facilities are now completely adequate to accommodate all types of private and commercial aircraft. In addition to the three paved 7000 foot runways, the airport has adequate taxiways and parking areas to facilitate convenient and expeditious handling of itinerant aircraft.

The airport has a CAA Traffic Control Tower, Radio Range Station (low frequency), ILS and approach lights, a VHF (VOR) range station, new high intensity runway lights, complete obstruction lights, standard rotating beacon and lighted wind tetrahedron remotely controlled from the tower.

The CAA-operated control tower provides approach control service, utilizing the Summerville Fan Marker as the holding fix from which straight-in instrument approaches are made. The Summerville marker is located 11 miles out the NW course of the Charleston Radio Range.

Hawthorne Flying Service, headed by Beverly E. Howard, has moved all its facilities, equipment and supplies from Hawthorne Field, Orangeburg, S. C., to Charleston Municipal Airport and is now in full commercial operation, catering to and serving the transient flyer, non-scheduled air carrier and all other phases of commercial aviation.

$500,000 Headquarters. The new administration building costing approximately $500,000 was financed on a 50-50 basis by the city of Charleston and the CAA under the Federal Aid airport program. The contractors, Charleston Constructors, Inc., started construction in April 1948 and the building was completed in the spring of 1949. The two-story semi-circular building provides ample space for Eastern, Delta and National air line offices, a huge lobby restaurant, Weather Bureau, etc.

The city government began planning for an adequate terminal building several years ago. The matter was brought to a head after Capt. Eddie Rickenbacker, president of Eastern Air Lines, stopped off at Charleston one day and severely criticized the tiny administration building. He threatened to discontinue the service of his line if something wasn't done.

The high intensity runway lighting was installed on the 7,000-foot N/S runway by the William S. Anderson Electrical Co. at a cost of approximately $37,000. In addition to the installation of these runway lights, this contract included all connections to the existing transformer vault and control tower, some transformer vault equipment (including a 25 KVA G.E. constant current transformer, 30 KVA brightness control assembly, oil switch, cutout, relays, etc.) also a new control tower panel.

The control panel for field lighting is similar to the standard CAA Type II AN panel except that one of the rotary

NEW CHARLESTON, S. C., administration building costing approximately $500,000 provides the most modern conveniences. Building, shown in this artist's sketch, was financed 50-50 City-CAA under the Federal-aid airport program.

CONTROL TOWER of Charleston, S. C., airport. New field lighting control panel does not show in this picture.

SIX THRESHOLD LIGHTS are installed across each end of the runway. Threshold lights have green cover glasses and are installed to mark the ends of the paved runway.

CROUSE-HINDS Type HIRL fixed focus bi-directional high intensity runway light has 200 watt, 6.6 ampere lamp. Runway lights are installed approximately 200 feet apart and 10 feet off each side of the runway in the turf area.

FIELD LIGHTING control panel at Charleston is similar to the standard CAA Type II AN Panel except that one of the rotary selector switches is used for the medium intensity runway lights.

selector switches is used for the medium intensity runway lights (on the E/W and NE/SW runways) and one is used for the high intensity runway lights.

Crouse-Hinds Installation. This was one of the first installations of the Crouse-Hinds Company's Type HIRL high intensity runway marker lights CAA Spec. L-819 (Type II fixture)—a fixed focus bi-directional type. Lights were installed on approximately 200-foot centers along both sides of the runway and six lights were installed across each end of the runway (threshold lights). Each light has one 200 watt, 6.6 ampere, T-14 lamp which is fed from a series-to-series insulating transformer in the base.

A single conductor series loop underground cable feeds into the base of each light to the primary of the insulating transformer. If the light is hit by a plane, a breakable coupling at the base of the unit breaks and the plug is immediately disconnected from the receptacle connecting to the transformer, leaving the primary series circuit intact.

The CAA reports that pilot reaction to these lights has been very enthusiastic. Airline pilots report that they are visible from as far as 50 miles away. Under restricted visibility conditions they have proved to be an invaluable aid to safe approaches and landings.

Airport Notes

A dust nuisance at a small airport caused the Town Board of **Babylon, Long Island,** to pass an ordinance giving it control of all airports within its limits.

New $300,000 administration building and $125,000 hangar at **Rosecrans Field, St. Joseph, Mo.,** will be paid for out of insurance from the two fires at the field, plus a Federal allotment of $140,000 . . . Condemnation of land for expansion of **Minneapolis' World Chamberlain Airport** is in progress, and the expansion program will be well under way before winter sets in.

George Oberdorf, new manager of **Nogales International Airport,** has announced plans for construction of a "sky lounge," a group of cottages and a swimming pool . . . **Cecil Wilson,** Hot Springs, N. M., business man, is new manager of the **Hot Springs Airport** . . . **S. R. Gilbert,** formerly state highway project engineer, is now airport engineer for the Nebraska Aeronautics Commission.

Pay telephones are being installed on the fingers of the **San Francisco Airport** concourses for convenience of passengers desiring to make calls during brief stopovers . . . **S. F. Airport** has just completed a survey to determine the most efficient use of space in the terminal building and parking lot, using procedures worked out by CAA and tested previously in Washington. **Parks College of Aeronautical Technology** this fall will offer a course in airport management.

Des Moines Plans Cut In Airport Use Charges

Reversing a trend that has gained widespread acceptance in airport circles in the past couple of years, Des Moines city officials are contemplating reductions in some of the charges made against users of the city's municipal airport.

The present rate scale, adopted two and one-half years ago, has not attracted the business to the airport that had been anticipated, and it is felt that a reduction in charges might bring more operators to the field.

A tentative new scale would require fixed-base operators to pay 1½% of annual gross income to the city instead of 2½% of the gross and ¼ of 1% on wholesale sales.

Local operators using the airport as a base and maintaining offices there would pay 5% of their gross with a minimum of $500 a year, instead of a $300 advance fee plus 5%.

Non-scheduled air cargo carriers using the field would pay a pound-rate equal to 15c per 1,000 pounds, instead of 20c, on the gross weight of each plane for each landing. The landing fee would be waived, however, if a specified amount of gasoline were bought, the amount depending on the weight of the aircraft.

Rentals for the terminal building, now under construction, also would be lowered, from $3.50 to $3.00 a square foot a year for ground floor space.

The charges may be changed slightly in the final drafting of the ordinance, but there is little doubt but that reduction will be made.

22 Airport Projects In Bay Area 10-Year Plan

A 10-year airport master plan for the San Francisco-Oakland Bay Area, made public late last month, recommends construction of 22 new landing fields, including one seaplane base and 11 heliports.

Other master plan recommendations were: (1) expansion of the San Jose Municipal Airport from Class 3 to Class 4 size by 1955; (2) addition of numerous air navigation and air traffic control facilities at the Oakland and San Francisco airports; (3) construction of six Class 1 airports, three for private planes exclusively, and (4) construction of a Class 2 airport on the Berkley tidelands, with enlargement to Class 3 size by 1960.

The 11 heliports would be established to facilitate delivery of mail by helicopter between the San Francisco and Oakland post offices and outlying communities. The proposed seaplane base would be at Oakland.

Radio Controlled Lights For Airport Runways

Runway lights can be turned on by radio from an approaching airplane at the Bellflower, Calif., Airport. The electronic system was devised to conserve power and eliminate the need for all night attendants at small airports. No special aircraft equipment is required, since the pilot merely depresses his microphone switch for the regular transmitter seven times and the runway lights go on. At the airport end, the seven signals actuate a solenoid hydraulic valve which cuts the power in. They go off after a pre-set period of time.

Range of the system is about two miles, but according to the manufacturer, Markets Unlimited, Beverly Hills, Calif., the device can be set for distances up to 15 miles. Cost of the control is $325.

AF Reserve Training Centers

The Air Force has revised its list of the 21 Air Force Reserve Training Centers it will operate. The new list includes: Hanscom Field, Bedford, Mass.; Floyd Bennett Naval Air Station, New York, N. Y.; Long Beach, Calif., Municipal Airport; Portland, Ore., Municipal Airport; San Rafael, Calif., Municipal Airport.

Godman AFB, Fort Knox, Ky.; Reading, Pa., Municipal Airport; Greater Pittsburgh Airport, Coraopolis, Pa.; Cleveland, O., Municipal Airport; Scott AFB, Belleville, Ill.; Orchard Place Airport, Park Ridge, Ill.; Stout Field, Indianapolis, Ind.; Fairfax Field, Kansas City, Kans.

Selfridge AFB, Mt. Clemens, Mich.; Wold-Chamberlain Field, Minneapolis, Minn.; Offutt AFB, Omaha, Neb.; Hensley Field, Dallas, Tex.; Tinker AFB, Oklahoma City, Okla.; Birmingham, Ala., Municipal Airport; Marietta AFB, Marietta, Ga.; Memphis, Tenn., Municipal Airport.

CAA Airport Grant Offers

For the three-week period ended September 2, Federal-aid airport grants totaling $1,483,215 were made to 22 communities by the Civil Aeronautics Administration, as follows, with class in parentheses:

California: Los Angeles Municipal (5), $56,114.

Colorado: Colorado Springs — Peterson Field (6), $26,000.

Delaware: New Castle County Airport (6), $32,000.

Idaho: Teton Peaks Mun., Driggs (1), $1,975.

Iowa: Clinton Municipal (3), $45,350; Jefferson Mun. (1), $20,000.

Kansas: Hutchinson Mun. (6), $203,000.

Maine: Portage Lake Seaplane Base, $9,600.

Maryland: Friendship International, Baltimore (4) $500,000.

Michigan: Wayne Major, Detroit (5), $200,000.

Minnesota: Rochester Mun. (4), $8,200.

Montana: Hot Springs Airport (1), $8,193.

Nebraska: Norfolk Mun. (4), $13,654.

New Hampshire: Claremont Mun. (2), $15,750.

New York: Chemung Co. Airport, Elmira (3), $66,295.

Oklahoma: Tahlequah Mun. (1), $1,459; Stillwater Mun. (4), $84,576; Ponca City Mun. (2), $26,404.

Oregon: Stevenson Emergency Airport, Cascade Locks (1), $7,951; Portland Mun. (8), $181,880.

South Dakota: Rapid City Mun. (5), $65,982.

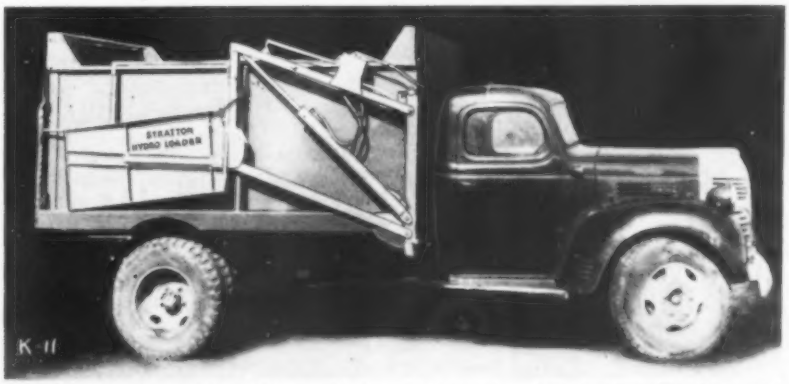
Texas: McCamey, Upton Co. Airport (3), $56,215.

Utah: Logan-Cash Airport (4), $5,548.

Washington: Bellingham Airport (4), $5,370; Forks Airport (1), $7,249; and Boeing Field, Seattle (7), $22,200.

These boosted the Federal-aid grants through September 2 to 914, and the Federal funds involved to $36,911,854.

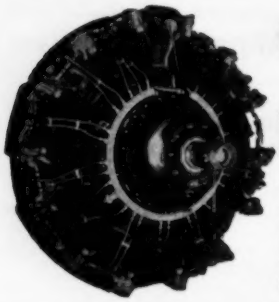
Hydro-Loader Saves Man-Hours



Stratton Equipment Co., Cleveland, O., has introduced the Stratton Hydro-Loader. Designed to reduce loading and unloading time to a minimum, the Hydro-Loader is a hydraulic mechanism actuated from the power take-off on the truck transmission to lower or raise the loader platform to a convenient height for the task at hand.

This enables one man to do the work of several. It is adjustable from the ground level to seven ft. or over, depending on the model, and is particularly useful in handling bulky material, boxes, crates, cans, bales or drums.

When not in use, the Hydro-Loader lies flat against the side of the truck, adding only a few inches to its width. Models with a lifting capacity of 750 lbs. or 1500 lbs. are available.



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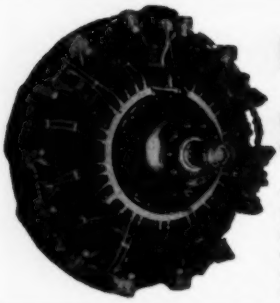
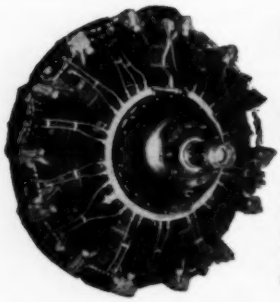


R1830-92

250

Converted from low time (average total 50 hours) Pratt & Whitney R1830-43 or -65 by approved Pratt & Whitney agency, block tested, warranted; each $2675.00



R1830-43-65

(Converted to 1830-92)

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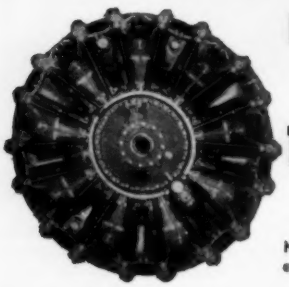

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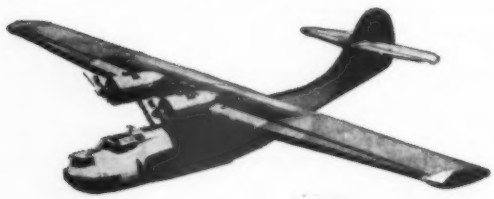

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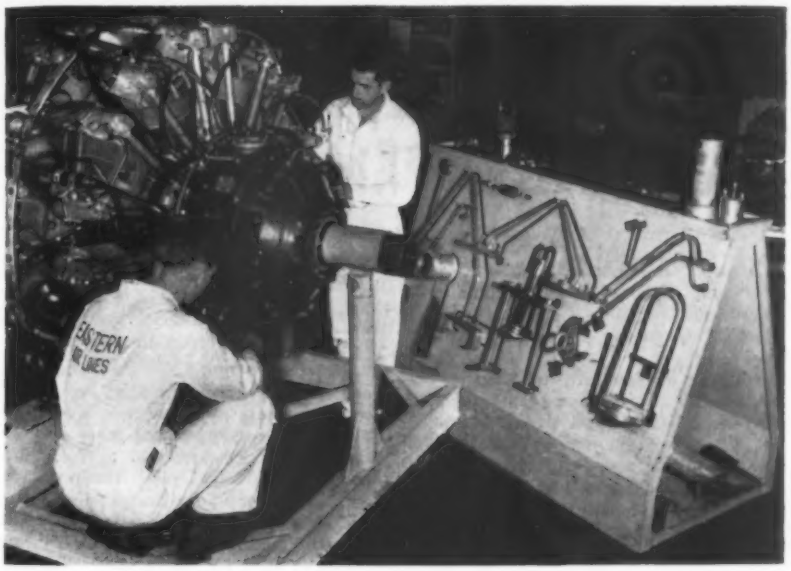

EASTERN AIR LINES' engine overhaul shop in Miami is one of the cleanest shops in the country. With a place for everything and everything in its place, Eastern's tool stands are typical of the efficiency and orderliness of operations there. The stand on the right holds the tools for the Wright C18BD1 engine used on Eastern's Constellations. Large and small tools are all carried on these stands with no trips to the tool room needed to keep the work flowing. Despite the widespread use of this type stand no tool losses are experienced, according to EAL.

Aids Group Lamp Replacement

MOST AIRPORT MANAGERS and operators know that after a certain number of hours of burning it is more economical to replace the lamps in the various field lighting units than to continue to burn them until they burn out. In addition, it's a much safer practice since the units put out more candlepower while in use and the problem of replacing important lamps at night and during bad weather is practically elimated.

All lamp companies furnish complete burning hour data for the various types of lamps—indicating just when lamps should be renewed after it is no longer economical to continue to burn them.

The panelboard shown in the picture is installed in the field lighting switch room at the Washington National Airport and is used to measure the number of burning hours of each circuit feeding the field lights and floodlighting transformer vaults. This board has 14 circuits. Each circuit is equipped with a small meter having dials similar to a standard watt-hour meter and thus it is possible to establish a schedule of group lamp replacements for the various field lighting circuits which will permit lamps to be replaced before they are burned out.

Hydraulic System Mock-Up

AT NORTHWEST AIRLINES there are few delays attributable to hydraulic system trouble on the Martin 2-0-2. Much of the credit for the trouble-free operation goes to the training aid built by Ray VanCott, instructor for Northwest at the St. Paul overhaul base. The model system as built by VanCott can be used to familiarize mechanics and pilots with general operation of the system and with trouble-shooting procedures.

Complete and portable, the system contains landing gear (lower right corner of photo), flaps, brakes, windshield wipers, steering gear and tail ramp as used in the Martin 2-0-2. As the only domestic operator of the Martin 2-0-2, NWA has found this type of training aid of extreme value in accumulating "experience" on system troubles in minimum time.

Aerocar Prototype to Begin Flight Tests This Month

By Burdette S. Wright, Jr.

A new development in the roadable airplane field is scheduled to unfold this month at Longview, Wash., where the Aerocar prototype is slated to begin flight tests.

Officials of Aerocar, Inc., report that to date the auto portion of the craft has traveled about 1000 miles; that driving it is routine—except for the problem of handling the crowds of people whenever it's parked in town.

Tests have shown the mileage to be 28 miles to the gallon, equal to the best performing automobiles in the light auto bracket. The craft attained speeds of about 60 on the highway with best performance determined at about 45 miles an hour. On a sod surface runway it accelerated to 75 mph in 900 ft., plenty of speed for a take-off run. It appears that the Aerocar can perform about like a Crosley or an Austin on the highway.

The early-scheduled flight tests should go smoothly, say the engineers, since wind tunnel tests in 1948 indicated that design characteristics were satisfactory. Tests were run off at the University of Washington with a one-fourth scale model which preceded the development of the prototype. In the wind tunnel the model indicated the design compared favorably with that of conventional lightplanes.

The prototype incorporates the spin-proof, two-control feature and full provision for cross wind landings, with one steering gear for operation in the air and on the highway. It has front wheel drive from a 100 hp Franklin engine which furnishes power for the more or less conventional prop at the tail of the flight component. The shaft to the prop was one of the most troublesome design problems, but officials say it has been solved to their satisfaction and to the "fair satisfaction," so far, of CAA. Full throttle operation of the drive shaft under stringent conditions showed that it should prove satisfactory in the air.

Cruise at 100 mph. Engineers expect top speed in the air to be about 109 mph, normal cruise about 100. Rate of climb should be over 500 fpm and service ceiling 12,000 ft. Cruising range should be "about 300 miles;" it should land at 53 mph with flaps in 300 ft. to full stop. It should take off and clear a 50 ft. obstacle in 1,250 ft. Fuel consumption is estimated at 6 gal./hr. in the air.

The Aerocar has all of the equipment needed to meet state vehicle laws for operation on the highway. Four wheel brakes, three speeds forward, one in reverse are controlled with conventional foot pedals and gear shift. Excellent ground stability is designed into the auto component built entirely of metal, employing separate keel box structure. Hydraulic shock suspension ride control and roll-down windows should insure comfortable riding on the highway.

Service Testing. CAA has authorized construction of 12 models for service testing. These will cost dealers about $10,000, it is reported, but when production gets under way cost to the public should be about $7,000. All units sold will carry a one year guarantee on parts.

Company officials say one of the largest lightplane manufacturers has made an offer to handle production. Offers have been received for first models from department stores interested in cashing in on the publicity value of the craft. Offers have been received for as high as $500 a day to be allowed to show the Aerocar as a department store attraction.

Money Needed. The company makes no secret of the fact that it wants money to manufacture the plane itself. It is counting on public interest after flight tests are completed to raise $200,000 to get into production. In any case, it plans to carry the development through to CAA certification. Sometime in the future they may call on prospective dealers to contribute to production costs, but this they cannot do until dealers are familiar with the plane and are sure of a desire on the part of the public to own it.

Success of the tests will bring a series of problems confronting developers of almost any departure from the conventional. There is insurance to consider; what will the hull rate be, for instance, for a vehicle exposed to risks of both the air and the highway?

There are flight regulations to be interpreted, taking into consideration the dual use of the craft. The first planes must be placed in capable hands. The

MODEL AEROCAR shows it to be radically different in several basic features of design, notably the upside-down rudder and the prop on the tail. Performance in the air is expected to be comparable to present lightplanes of about the same horsepower.

SIXTY MILES PER HOUR on the highway, 100 in the air, according to designers of the Aerocar. It is equipped with all the features of a car, including roll-down windows and four-wheel brakes.

Aerocar Specifications

Wing Span	30 ft.
Wing Area	168 sq. ft.
Wing Loading	10.4 lbs. per sq. ft.
Width of Trailer (max. for road travel)	8 ft.
Length (as aircraft)	21 ft.
Height Overall (automobile)	5 ft. 4 in.
Height Overall (aircraft tail)	7 ft. 2 in.
Auto Road Tread	5 ft. 2 in.
Auto Wheel Base	6 ft. 6 in.
Seat Width	42 in.
Car Length	10 ft. 4 in.
Trailer Length	14 ft.
Car-Trailer Length	24 ft.
Baggage Space	14 cu. ft.
Empty Weight (car)	912 lbs.
Pilot and Passenger Weight	340 lbs.
Fuel Weight (18 gals.)	108 lbs.
Baggage Weight	50 lbs.
Trailer Weight (wings-tail)	340 lbs.
Gross Flying Weight	1750 lbs.
Wheel and Tire Size	4.50x12
Engine—Franklin 225	100 H.P.
Power Loading	17.5 lbs. per H.P.
Trailer Wheel Size	3.50x6
Ground Clearance at Body	12 in.
Trailer Tread	5 ft. 2 in.
Maximum Road Horsepower	30 H.P.
Electric System	12 volts

bad publicity attendant upon an accident in a new plane is well known by bitter experience in the industry. There is maintenance to be established; what happens when a plane-type engine needs attention from an aircraft technician? These are just a few of the things that will mean a lot to public acceptance of a roadable airplane.

Lower Insurance Scale Approved for Cessna 195

A reduction in the insurance rate for private or company-owned four-place planes not used in instruction or rental activities has been revealed by Cessna Aircraft Co. The base rate for the Cessna 195, it was reported, has been reduced by Associated Aviation Underwriters of New York City to 10.1%. This figure can be reduced further to 7.65% if the qualifications of the pilot and the plan of operation of the plane are favorable from the viewpoint of the underwriter.

With the Cessna 195 selling at about $14,950, insurance at the base rate would cost $1508.95 and with the maximum allowable reduction would cost $1141.11. The lowest figure is 1% lower than the old allowable reduction, a saving of about $1.00 per $100 evaluation of the plane.

This is further evidence of a growing trend for the insurance companies to base insurance rates on the merits of the pilot and plan of operation rather than on the plane itself.

According to an insurance company spokesman, 300 hours flying time in the Cessna 195 or other four-place plane, plus good hangaring and maintenance facilities, give the pilot an excellent chance for the lowest rate.

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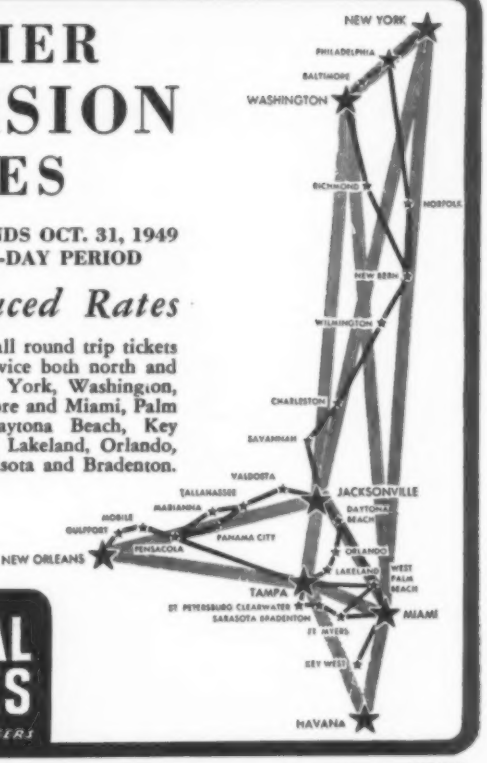

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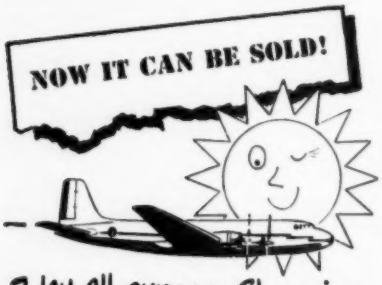

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CANADA • U.S.A. • BERMUDA

Aviation Sales and Service

Beech & Distributors: Resentment of some Beechcraft distributors over the company's selling of eight Bonanzas to Central Airlines direct rather than through a distributor was effectively dissipated during a three-hour conference between the distributors and officials of the Beech Aircraft Corp. during the National Air Races at Cleveland. Some of the Beech distributors saw an opportunity to bid on a worthwhile contract or two after the Civil Aeronautics Board issued the ruling this summer that single-engine aircraft might be used in commercial transport operations over certificated routes under certain limitations. But when the first sale of single-engine planes to a certificated feederline was announced several weeks ago, the contract for purchase of eight Beech Bonanzas had been negotiated directly with Central Airlines by the manufacturer. First reaction of some distributors was one of indignation.

However, at the Cleveland meeting, Beech officials convinced the distributors that: (1) there is not likely to be any substantial number of sales of single-engine aircraft to certificated carriers, but such business of this type as there might be would be worth something to a manufacturer and to all his distributors and dealers from the standpoint of prestige; (2) Beech sold to Central direct because other companies were bidding for the business and it was a case of selling direct or not selling at all; and (3) Beechcraft distributors might profitably forget about possible feederline customers and concentrate their sales efforts, instead, on the potentially much more lucrative fields of air star mail routes and a nationwide network of air taxi services. The meeting ended in a spirit of harmony.

Additional Business for Operators: *The recent promotion among operators by the Regal Air Corp. of New York is apparently showing some results. Manufacturers of "Reglo," a plastic sprayed-on high gloss finish for planes (and other things), the company urged operators to seek additional business for their spray shops among trucking company owners using their product. One operator, Russ Smith, at Wilkes-Barre, Pa., recently obtained the spraying contract to Regloize the entire fleet of a large bus company. In order to sell the job to the company president, Smith first sprayed his Navion. After this the bus job was easy. The first bus was sprayed in the bus company's shop but Smith convinced them that a better job could be done at the spray shop at the airport and the rest of the fleet was done there.*

Sunday Pilots: One of the main reasons why pilot-owners decide to sell their planes, according to a recent survey, is the fact that they just don't get enough use out of them. In most cases, week ends are the only times they can get away, and then there are many who are still faithful about attending church services on Sunday morning.

Operators who are attempting to help pilot-owners get more use and utility out of their planes should team up with their local and nearby church pastors, such as the Rev. M. W. Wahl of Cambridge, Wisconsin. Rev. Wahl realized that many pilots like to take Sunday morning flights, and yet are desirous of attending church. Being torn between two desires, Rev. Wahl, flying pastor of St. James Lutheran Church, invites you to fly to his church and worship with him. Free transportation is provided to and from the Cambridge airport and the church every Sunday morning. This arrangement helps everybody involved—including the airport operator.

Heliport Lights: *With operators being signed up daily as dealers and distributors for helicopters, they should be thinking about ways and means of lighting their helicopters for night flying. Los Angeles Airways, which has a helicopter air mail pickup and delivery at L. A., in cooperation with "Pop" Butler, CAA's Region 6 lighting engineer, has installed a workable system consisting of sheets of "Scotchlight" fastened to the fence posts around the heliport to pick up the helicopter's landing lights. In addition, a high intensity railroad type signal flare stuck in a sand barrel at the gate of the heliport a few minutes before landing time provides the necessary distinctive light to serve as a "beacon."*

CAR Revision Would Clarify Private Pilot 'Hire' Rule

Private pilot privileges would be clarified by a revision in CAR 43.60 proposed by CAB's Bureau of Safety Regulation. The current regulation reads: "A private pilot shall not pilot aircraft for hire," but an explanatory note says the rule permits "sharing the expenses of a flight or piloting aircraft in furtherance of a business when the flight is made solely for the personal transportation of the pilot. The Bureau has been advised that this rule has been difficult to interpret.

The rule would establish the following: (1) passengers may contribute to the operational expenses of a flight; (2) a salesman may pilot a plane and carry samples in the course of his employment; (3) an airline official may pilot a company plane incidental to his employment, and carry friends or fellow employes, providing no charge is made; (4) a farmer may spray or dust his own crops, but not his neighbor's for compensation; (5) a private pilot may not demonstrate a plane for sale as an employe of, or for the benefit of, someone in the business of selling planes; and (6) a real estate salesman may carry prospects to show land offered for sale.

If approved, the amended Part 43.60 would read as follows: *'Private Pilot.* A private pilot shall not pilot aircraft for hire, or in connection with any business or employment, unless the flight is merely incidental thereto and does not involve the carriage of persons or property for compensation or hire.'

Comments should be sent to Bureau of Safety Regulation, CAB, Washington 25, D. C.

Fixed-Base Briefs

Boston-Bedford Airport (Lawrence G. Hanscom Airport) is now 30c and 30 minutes away from downtown Boston by way of Boston's public bus system. The airport is equipped with ILS and night lighting and is operating on a 24 hour schedule. They invite patronage by private and corporation aircraft and charge no landing fees for this type operation.

Vermont Aeronautics Commission is using a Ryan Navion to carry on its duties in the state and neighboring areas. The Governor and members of the State Legislature also use the plane on state business and for emergency flights into areas not served by regular air carrier.

Five Piper Cubs were loaded into one C-46 to be flown to the Bogota, Columbia Aero Club August 17. Largest shipment of planes by air previous to this was three Cubs to Alaska in a C-47.

New York State's airmarking program aimed at 700 hundred markers throughout the state will be advanced soon by an additional 75, making the total 355 since initiation of the program. Contract for the 75 went to Binghamton Service and Painting Co., for its low bid of $4,800.

IN RECOGNITION OF EXCELLENT COOPERATION

WE SALUTE...

TRANS WORLD AIRLINES

Our hat's off to TWA, Mid-Continent Airlines' biggest customer! But at Mid-Continent we always think of TWA folks as *more* than good customers. You're good friends! You're neighbors, too, because both TWA and Mid-Continent grew up together in Kansas City and maintain General Offices there; our systems cross at several points.

Down through the years— from 1935 until today—you folks at TWA have been most cooperative in exchanging information necessary to coordinate schedules and effect improved connections for Mid-Continent-TWA passengers. This same cooperation by station and flight personnel has resulted in the exchange of thousands of satisfied passengers. In fact, Mid-Continent is one of TWA's biggest customers.

This kind of cooperation exists, too, between MCA and the 16 other airlines that connect with our system. It's such teamwork as this that means steady growth for the entire aviation industry.

So this month we say: "A sincere 'thank you' to *all* of our TWA friends. You can count on our cooperation, too."

(Our next ad will salute another cooperative airline)

Serving the Heart Of America Safely for More Than Fourteen Years

MID-CONTINENT AIRLINES

Get Your Money's Worth...

FLY DELTA

To and Through the South

You Get the Most for Your Money When You Fly DELTA DC-6's

"Luxury-on-a-Budget" Air Cruises

to Miami Beach-Havana effective until November 1st.

NONE FASTER...Travel 300 mph and faster. Local service geared to express connections.

NONE FINER... DC 6 is the newest type 4-engine plane of any serving the South ... only DC-6's have Sky Lounges ... wider seats in pairs only ... big picture windows.

Delta AIR LINES

General Offices: Atlanta, Ga.

Charter Flights Can Be Good Revenue Source, Survey Shows

By Eric Bramley

Although some of the domestic airlines will do a substantial amount of charter business during the last four months of this year, the development of this business is spotty and the majority of the airlines do not see the time when it will become a major revenue-producer.

An American Aviation survey indicates, however, that there is probably a lot more charter business available that the airlines could get if they went after it. The principal reason given for not going after it is unavailability of equipment.

The survey showed some airlines unable to handle all the charter business offered, others with more volume than last year, others with less, and others with nothing on the books. This spotty development will probably continue, according to some of the carriers, until such time as the airlines are able to set up charter departments, allocate equipment for the purpose, and make a definite sales effort in that direction.

An encouraging factor is the report by almost all airlines of the widespread acceptance of air travel by college and professional athletic squads, particularly football teams. This acceptance has developed only during the past few years. Football coaches formerly were fearful of the effect of air travel on their players, and were also wary of the safety angle. Now, however, most of them conclude that their players are in better shape to play after an air trip than after a long train ride. And the safety record has spoken for itself.

The survey showed the following:

James Austin, vice president-traffic and sales, **Capital Airlines:** The company, which has made a concentrated effort to get charter business, has in excess of $300,000 booked for the last four months of 1949, a $65,000 to $75,000 increase over last year. About 75% of it will be athletic teams, with about 42 of them booked. Asked if charter business can become a major revenue-producer, Austin stated, "Definitely yes. It represents a substantial sum of money." He said it has materially aided Capital's equipment utilization.

Harold Crary, v.p.-traffic and sales, **United Air Lines:** "United has more charter business on its books this fall than it had for the same period last year, and about 75% of this is represented by travel of athletic teams . . . There is a general acceptance of air travel by athletic teams . . . United is booking this business at rates which are reasonable to the teams and at a figure which yields a profit to United. We have not resorted to rates which are 'below the cost of production' because even the regular passenger fare is less expensive than rail-pullman-meals, disregarding all the other advantages of air transportation." Charters, he added, can produce substantially more revenue for the airlines than they do today.

E. O. Cocke, v.p.-traffic, **TWA:** Although TWA will not, for competitive reasons, reveal dollar figures, its charter business is somewhat higher than last year, and about 66% of it during the last four months will be sports travel. For the entire year, special flights will total about 10,000,000 passenger-miles. A total of 20 professional or college teams will be traveling, "some making as many as three transcontinental round-trips during the season . . . There is not much question that there is more general acceptance of air transportation for athletic teams each year."

R. E. S. Deichler, v.p.-sales, **American Airlines:** "Our dollar volume in charter business will not be as great this year as last year inasmuch as we were unable to accept all that was offered. Approximately 40% . . . comes from athletic teams . . . There is a much more general acceptance by the teams." He does not believe charter business will become a major revenue-producer. "It will continue to be a greater producer than at present, but historically profits and revenues in transportation are made primarily on regular schedules."

Rex Brack, general traffic and sales manager, **Braniff Airways:** Company has bid on and received in excess of $70,000 in charter business for the last four months of 1949. "In addition, there is a likelihood of another $175,000 to $190,000 that we have quoted on and have a reasonable chance of getting." Most travel is by teams and fans. "The charter business definitely shows promise of becoming one of the major revenue producing factors in the airline business." Although the business has aided utilization, Braniff has been unable to handle some charters because equipment has not been available or has been spotted in the wrong place.

Richard Dick, v.p.-sales, **Western Air Lines:** Five athletic charters during September-October will result in revenue of $11,280, against $31,023 last year. However, the figure for the remainder of 1949 is expected to be increased materially in the near future when commitments are in from other teams. Western at the present time "would hesitate to say" that charters will become a major revenue-producer, "but it is definitely a very important and lucrative adjunct."

T. M. Miller, general traffic and sales manager, **Chicago & Southern Air Lines:** C&S has $14,171 in charters booked for the last four months against $19,514 last year. All this business is for movement of two football teams. "Requests for DC-4 equipment for charters during the fall far exceed our ability to provide the desired services . . . The six DC-4's we own are currently being utilized on our own . . . schedules to the extent of 9:27 hrs. per aircraft . . . Business of this kind should prove to be a major source of revenue in the future."

E. J. Riederer, traffic manager, **Continental Air Lines:** Company has $33,077 on the books and expects another $20,000, all of which will be athletic teams. This will be slightly less than

Automatic Reservations— Continental Air Lines is experimenting with a new-type "automatic reservations system" which permits a traveler to sign his name to a reservation chart at a hotel during the night when this department of the airline is usually closed. At time of closing, CAL reservations department telephones the hotel clerk the number of seats available on early morning flights. In early morning the airline phones the hotel and the names on the chart are listed for the flights. The airline then calls the passenger and completes the arrangements. Initially established at El Paso and Albuquerque on August 25, the program will be expanded shortly to other cities.

last year, attributable to unavailability of equipment. Continental's 1948 total was $73,019, or .022% of total passenger revenue. "There can be little question but what the revenue from scheduled operation will never be approximated by our charter revenue."

L. B. Kinports, director of sales, **Northwest Airlines:** "We have numerous requests for charters during the fall but are unable to make any definite commitments due to our shortage of equipment and the fact that the company has not yet decided what will be done with our DC-4's which are being replaced by Stratocruisers nor with the few remaining DC-3's . . . Demands . . . are much greater than . . . last year."

Laigh Parker, v.p.-traffic and sales, **Delta Air Lines:** Delta has no charters definitely booked, but expects to perform some eight to 10 flights, a little heavier volume than last year. Practically all of it will be athletic teams. Delta has not had equipment available for long-range commitments. Charter business so far has amounted to only about 1/5 of 1% of passenger revenue, but if equipment were available and a reasonable sales effort made, it could probably be increased to 2%.

Hugh Coburn, v.p.-sales and traffic, **Mid-Continent Airlines:** Business booked is negligible but MCA has several tentative bookings and is bidding on others. Situation is about the same as last year. Promotion of basketball and hockey charters has been more successful than football and the company can handle them better in its DC-3's. Equipment availability is a problem. "However, we have had several months in which charter revenue has shown up quite strongly on our financial statement and I cannot help but feel that we are still only scratching the surface of potential charter traffic."

Alfred M. Hudson, v.p., **Colonial Airlines:** Has no charters booked. During the past year acceptance of air travel has increased "but because of the high cost quoted as compared to the prices quoted by 'wild cat' operators here in this area, we got very little of this business. I believe that the only way a charter business can become a major revenue-producer . . . is to have a department set up and adequate flight equipment and crews to handle it."

George F. Scott, general sales manager, **Northeast Airlines:** NEA has not promoted charters because of unavailability of equipment. If the company does not dispose of its three DC-4's this fall, "it may be that our policy will change to the extent that we would get into the promotion of charter business."

Although most of the airlines believe that their charter revenue will grow, another interesting commentary is made by Harold Crary. "One factor which has discouraged too rapid growth of the charter business is the multiplicity of regular schedules offered by the airlines," he said. "For example, there are 1,000 non-stop seats flown each day between New York and Chicago in each direction, and 450 non-stop seats a day between Chicago and Los Angeles in each direction, whereas some years back, when planes were smaller and schedules were not so much 'around the clock' the charter plane had real appeal."

Over the Counter

By Eric Bramley

Sales Promotion

IF YOU want to talk about a sales promoter and a 3c airline, we have both in one package. We have discovered that **Cia. Mexicana de Aviacion, Pan American Airways'** Mexican affiliate, is offering a five-day round-trip excursion between Nuevo Laredo and Monterrey for $7.65. Air mileage is 135, or 270 round-trip, resulting in a fare of 2.8c per mile. Standard DC-4's are used. And now, to top it all off, listen to this: Monterrey Carta Blanca beer is served in flight with the compliments of the company! . . . **Northwest Airlines** is sending one of its new Boeing Stratocruisers on a promotional tour of several cities, including Chicago, Detroit, New York, Boston, Washington, Cleveland and Pittsburgh. The public will be allowed to go through the plane.

Special mention to **American Airlines'** eye-catching full-page ad in *Time* and *Saturday Evening Post*. Headed "Do you travel as well as your letters," the ad shows a father picking up a little girl so she can deposit an air mail letter in the mail box. Purpose is to get people who use air mail but don't fly to take air trips. It's well done . . . Forrest Barrett of **Pan American Airways,** Los Angeles, promoted a full DC-4 load of passengers from Bakersfield by selling Kern County Chamber of Commerce on staging a friendship and industrial tour to Mexico. He's also promoted a flight of 50 students from Honolulu to Woodbury College, Los Angeles, in September . . . To improve sales and reservations technique, **Pioneer Air Lines** is using a newly-purchased tape recorder. John W. Force, Jr., eastern regional traffic and sales manager, is devoting full time to showing Pioneer's reservations personnel how they sound on the telephone, the mistakes they are making, and the techniques . . . Trans-Atlantic airlines will be interested in plans of **Economic Cooperation Administration** for promoting off-season fall and winter travel to Europe, as a means of getting tourists dollars abroad. Plans include (1) creation of a series of special events such as fairs, exhibitions, conventions, conferences, etc., to attract specialized groups of Americans to Europe, (2) popularizing Europe as a winter sports mecca, (3) expansion of student, teacher and youth hostel travel, (4) encouragement of travel on the part of foreign-born U. S. citizens and Americans of foreign extraction, and (5) lowering of transportation and hotel costs. Plans are being handled by **European Travel Commission,** recognized by the Organization for European Economic Cooperation as its advisory body on travel. . . . **United Air Lines** has issued a three-color brochure highlighting Hawaii's "Aloha Week," Oct. 30-Nov. 7 . . . For the second time this year Ed Serle, **KLM's** New York sales manager, has won the monthly 'direct mail recognition award" made by the National Research Bureau for outstanding mail sales promotion.

Traffic and Tariffs

NORTHWEST AIRLINES states that inauguration Aug. 1 of Stratocruiser service between Chicago and Twin Cities brought a 47% increase in non-stop passenger business between these two terminals, in face of a system-wide leveling off during July and August. NWA started transcontinental Stratocruiser service Sept. 1 . . . **KLM Royal Dutch Airlines** has opened a new hotel in Curacao, Netherlands West Indies, for accommodation of transit passengers on its flights making a scheduled night stop on the island. Through passengers on services from Europe and Canada pay nothing for their stay at the hotel, which is half a mile from the airport . . . **Braniff Airways** is opening new traffic offices in Detroit and Windsor, the former in the Book Bldg., the latter at 29 Park St. West. Dale Madden is district sales manager . . . **All American Airways** on Sept. 1 became party to over 100 joint fares with eight scheduled airlines . . . **Pan American Airways** has filed with CAB 60-day reduced round-trip Alaskan fares for the period Oct. 1-Mar. 15. Examples: Seattle-Juneau round-trip reduced from $135 to $100.80, Seattle-Fairbanks from $234 to $169.20.

New Services

WESTERN AIR LINES on Sept. 1 started Convair-Liner service between Los Angeles and Salt Lake City on a 2 hr. 55 min. schedule. Company also rescheduled Pacific coast flights, eliminating Los Angeles-Portland nonstop because of disappointing load factors and reducing Los Angeles-San Francisco trips to six to provide a new early morning trip Los Angeles-Seattle via San Francisco and Portland . . . **Southern Airways** on Sept. 15 starts the final segment of its system linking Charleston, S. C. with Augusta, Macon and Columbus, where it intersects Atlanta-Jacksonville segment. Initial frequency will be two round trips daily . . . **Pan American Airways** on Aug. 31 flew its last DC-3 trip in Europe and now has DC-4's on London-Vienna and Brussels-Vienna.

Classified Advertising

The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications $1.00 a line, minimum charge $4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Avenue, NW., Washington 5, D. C.

HELP WANTED

NEED A PILOT? NEED A JOB?

Are you qualified to fly the Atlantic, to instruct, to fly charter, to dust, or to help organize a new airline? We can help you find the job you need, or the man you need. No registration fee. PILOTS EMPLOYMENT AGENCY, Box 152, AA-9, Whippany, N. J.

WANTED

To lease with purchase option for period Dec. 15, 1949 to Mar. 15, 1950 two top-notch airliner DC-3's with all compliances for scheduled service. Island Air Ferries, Inc., MacArthur Airport, Bohemia, L. I., New York.

Italian Transport Tested

The first Italian post war transport, the Breda Zappata 308, was recently test flown for the first time. The BZ 308 is a four engine transport which looks very much like the Constellation. Domestic and international versions of the aircraft are planned. The international version will feature a two compartment cabin seating 55 passengers. Take-off weight will be 101,600 lbs.; cruising speed 260 mph.

The airplane is powered by four Bristol Centaurus engines of 2470 hp each driving five bladed Rotol propellers. The first ship was built in the Milan plant of the Societa Italiana Ernesto Breda. Wing span of the 308 is 138 ft., 1 in. and length is 109 ft.

Now! An All-In-One Financial Reference Source of U. S. Certificated Airlines

Authoritative, comprehensive—AIRLINE RECORD, 1949—the **only** complete financial reference source of the airline industry. Fully analyzes every C. A. B. certificated airline over seven-year base period. 160 pages of essential data, profusely illustrated, cloth-bound book. Use it for comparisons, investment research. Write direct to publisher for publisher's price of $7.50, postage prepaid: Limited printing! Order now! Address Dept. T.

AIRLINE RECORD
Roy R. Roadcap, Publisher
208 So. LaSalle St. Chicago 4

State Chart: The Pennsylvania Aeronautics Commission is now distributing copies of its 1949 aeronautical chart, incorporating all the latest navigational aids in the state. Chart shows a total of 343 airports, 200 of which are commercial fields, and 744 air markers.

Airlines of S. A.: The Foreign Air division of the Civil Aeronautics Board has published a special study entitled "Airlines of South America," which is to be added to the Airline Manual. The publication is a collection of short studies of all the airlines incorporated in South America, together with a statistical listing of the airlines of each country and a general statement regarding each country.

FOR SALE!

DC-4 (C-54-B-DC) 50-PASSENGER AIRPLANES

$125,000.00 and up

plus 2% sales tax

- Equipped with P. & W. R-2000-13 (2SD13G) Engines.
- Recently removed from scheduled passenger service.
- Standard airline interior.

"AS IS" MUNICIPAL AIRPORT, TULSA, OKLAHOMA

Address all inquiries to:

AMERICAN AIRLINES, INC.
Att: Director of Surplus Sales
43-02 Ditmars Boulevard, Astoria, Long Island, N. Y.
(Telephone RAvenswood 8-1000)

FOR YEARS, THE ACCEPTED
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HOME OF THE Hawaiian Room

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U. S. Feeder Airline Revenues & Expenses, April - June

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American	$ 531,092	$ 134,876	$ 390,218	$ 5,514	$ . . .	$ 537	$ 280	$ 793,657	$ 392,035	$ 401,622	$ -262,565
Challenger	385,470	113,838	263,263	1,166	4,365	712	999	387,241	227,879	159,361	-1,770
Empire	261,647	85,649	173,352	814	. . .	519	525	222,530	120,270	102,260	39,117
Monarch	409,103	108,725	287,874	2,193	6,224	567	1,969	395,232	205,759	189,473	13,871
Piedmont	622,400	294,400	312,457	3,006	5,382	2,603	2,257	587,732	348,369	239,363	34,668
Pioneer	865,825	409,707	432,954	2,442	4,843	2,658	694	763,724	394,421	369,304	102,100
Robinson	282,023	118,068	160,632	. . .	2,046	335	877	284,651	147,485	137,166	-2,628
Southern*	14,907	1,945	11,797	281	. . .	10	. . .	46,581	20,959	25,621	-31,674
Southwest	638,041	299,177	313,452	3,533	10,910	925	4,295	566,590	290,838	275,752	71,452
Trans-Texas	498,916	135,145	357,723	2,762	1,978	875	. . .	630,283	344,582	285,701	-131,367
West Coast	340,238	151,487	185,983	1,772	. . .	381	. . .	318,087	149,544	168,544	22,150
Wis. Central	319,779	72,936	242,790	1,345	. . .	423	. . .	301,815	160,019	141,796	17,964
TOTALS	5,169,441	1,925,953	3,132,495	24,828	35,748	10,545	11,896	5,298,123	2,802,160	2,495,963	-128,682
					Helicopter	Mail Service					
Los Angeles	108,181	. . . .	108,181	. . .	. . .	. . .	. . .	106,221	68,793	37,428	1,960

* Began operations June 10, 1949.

NOTE: Under CAB filing procedures, the airlines file a cumulative quarterly financial report for April-June in place of a separate statement for the month of June. Traffic data, however, are reported separately for each month.

U. S. Feeder Airline Revenues & Expenses, Jan. - June

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American*	$ 789,299	$ 141,517	$ 638,982	$ 8,121	$ . . .	$ 547	$ 454	$ 1,108,992	$ 550,076	$ 558,916	$ -319,693
Challenger	711,694	202,956	490,721	5,273	8,756	1,383	1,271	741,641	406,271	335,370	-29,946
Empire	480,050	147,844	327,417	1,699	. . . .	834	525	438,804	235,665	203,139	41,246
Florida**	174,048	23,064	149,961	341	. . . .	118	. . .	301,945	165,833	136,112	-127,897
Monarch	735,239	175,494	541,239	3,512	9,215	891	2,059	779,537	401,710	377,827	-44,297
Piedmont	1,092,885	466,167	603,658	4,819	7,532	3,999	3,642	1,128,670	673,948	454,722	-35,785
Pioneer	1,612,427	700,073	851,523	4,582	8,071	4,807	10,633	1,483,331	762,300	721,031	129,096
Robinson	466,127	203,618	257,886	. . . .	3,738	522	1,017	549,103	283,164	265,938	-82,976
Southern***	14,907	1,945	11,797	281	. . . .	10	. . .	46,581	20,959	25,621	-31,674
Southwest	1,163,832	493,013	630,819	6,396	18,903	1,578	6,652	1,130,980	583,024	547,955	32,852
Trans-Texas	895,531	222,549	663,612	4,148	3,062	1,290	. . .	1,140,517	628,913	511,604	-244,986
West Coast	612,597	236,137	372,510	2,692	. . . .	542	. . .	630,391	299,665	330,726	-17,795
Wis. Central	554,660	100,017	446,305	3,216	. . . .	603	. . .	565,219	285,736	279,483	-10,560
TOTALS	9,303,296	3,114,394	5,986,430	45,080	99,277	17,124	26,253	10,045,711	5,297,264	4,748,444	-742,415
					Helicopter	Mail Service					
Los Angeles	214,042	. . . .	213,976	. . . .	. . . .	. . .	. . .	187,734	114,093	73,641	26,308

* Began passenger service March 7, 1949.
** Terminated operations at end of March, 1949 in accordance with CAB's decision not to renew airline's temporary route certificate.
*** Began operations June 10, 1949.

U. S. International Airline Revenues & Expenses, April - June

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U. S. MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	$ 1,017,648	$ 877,670	$ 25,808	$ 20,939	$	$ 57,013	$ 11,476	$	$ 896,817	$ 470,439	$ 426,378	$ 120,831
Amer. Oltena	6,687,380	4,468,853	1,112,871	367,400	622,423	. . . .	61,289	24,652	5,965,630	2,849,642	3,115,989	721,750
Braniff	1,052,105	604,435	400,370	4,545	. . . .	20,159	18,105	. . . .	1,000,816	463,055	537,761	51,289
C & S	970,384	541,269	376,987	1,424	. . . .	32,095	18,365	. . . .	800,903	374,172	426,732	169,480
Colonial	366,186	263,928	91,165	2,396	. . . .	7,790	906	. . . .	382,316	174,250	208,066	-16,130
Eastern	231,269	192,701	9,805	. . . .	. . . .	26,042	2,721	. . . .	237,954	119,138	118,816	-6,685
National	331,349	241,651	48,943	. . . .	31,775	. . . .	5,350	3,629	360,896	148,116	212,780	-29,547
Northwest	3,540,384	1,547,874	1,419,463	139,030	8,066	403,302	26,791	. . . .	2,816,552	1,238,393	1,578,160	723,832
Panagra	4,377,792	2,631,593	1,021,401*	184,380	291,289	. . . .	114,617	37,223	3,828,943	1,717,800	2,111,143	548,849
Pan American												
Latin Amer.	16,785,809	10,529,128	3,426,022**	465,216	1,787,448	. . . .	322,627	118,566	15,752,127	6,956,024	8,796,103	1,033,682
Atlantic	14,056,128	7,346,252	4,818,808**	665,059	932,512	. . . .	176,739	52,165	13,022,802	6,578,729	6,444,073	1,033,325
Pacific	8,986,359	4,914,296	3,031,123**	223,970	729,160	. . . .	75,523	1,010	8,245,917	4,377,064	3,868,854	740,441
Alaska	1,329,630	654,283	395,748**	. . . .	234,893	. . . .	3,443	39,560	1,248,318	586,326	661,992	81,312
TWA	11,876,749	7,808,587	2,307,732	655,985	743,131	. . . .	224,359	35,390	10,008,535	4,845,126	5,163,408	1,868,215
United	1,267,619	1,029,374	153,110	. . . .	31,386	. . . .	13,306	. . . .	1,010,219	575,837	434,381	257,400
TOTALS	72,876,791	43,651,894	18,639,356	2,730,344	5,412,083	546,401	1,075,617	312,195	65,578,745	31,474,111	34,104,636	7,298,044

* Includes $167,000 non-recurring U.S. mail pay due realized loss of $175,100 included in non-operating expense on DC-4 sold in April, 1949.
** Represents company's estimate of amount which should be received in accordance with the terms of the Civil Aeronautics Act when permanent rates are established. Estimate exceeds temporary rates in effect by:
Latin American Div. $2,316,409; Atlantic Div. $3,147,602; Pacific Div. $547,549; Alaska Div. $66,275

NOTE: Data in above tabulations were compiled by American Aviation Publications from reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for Braniff to South America; C & S to South America; Colonial to Bermuda; Eastern to Puerto Rico; National to Havana; Northwest to Orient; and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.

U. S. International Airline Revenues & Expenses, Jan. - June

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U. S. MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	$ 2,089,297	$ 1,803,530	$ 49,367	$ 39,804	$	$ 116,654	$ 25,593	$ 5,091	$ 1,857,667	$ 959,533	$ 898,134	$ 231,629
Amer. O'Seas	11,128,469	6,905,274	2,033,064	790,367	1,065,876	. . . .	102,739	185,028	11,293,187	5,408,606	5,884,582	-164,718
Braniff	1,709,109	939,294	690,571	6,983	. . . .	36,872	27,727	. . . .	1,674,215	806,207	868,008	34,894
C & S	1,856,567	1,023,590	739,745	2,804	. . . .	58,965	30,953	. . . .	1,542,178	728,671	813,507	314,389
Colonial	663,768	455,076	185,365	2,396	. . . .	18,660	2,271	. . . .	783,544	356,254	427,291	-119,776
Eastern	447,342	370,389	18,840	. . . .	. . . .	52,110	6,003	. . . .	454,701	233,037	221,665	-7,359
National	678,069	517,780	68,385	. . . .	57,652	. . . .	10,553	13,699	678,264	288,122	390,141	-194
Northwest	6,542,918	2,653,119	2,825,580	234,107	16,642	775,046	50,494	. . . .	5,761,502	2,543,156	3,218,346	781,416
Panagra	8,721,710	5,572,996	1,798,437*	373,453	594,606	. . . .	211,587	47,045	7,606,796	3,448,108	4,158,688	1,114,914
Pan American												
Latin Amer.	34,322,344	20,702,377	7,877,263**	949,774	3,706,403	. . . .	644,278	169,389	32,172,443	14,043,051	18,129,393	2,149,900
Atlantic	25,203,269	12,347,889	9,366,577**	1,158,932	1,736,808	. . . .	310,121	208,168	23,269,417	11,426,374	11,843,043	1,933,853
Pacific	17,360,045	8,831,451	6,585,437**	468,325	1,293,975	. . . .	142,419	5,210	16,117,491	8,535,904	7,581,587	1,242,554
Alaska	2,574,486	1,081,152	1,053,066**	. . . .	393,270	. . . .	5,742	39,560	2,415,827	1,127,534	1,288,293	158,659
TWA	20,512,551	12,315,983	4,575,025	1,361,254	1,535,265	. . . .	383,680	188,263	18,817,976	9,196,706	9,621,270	1,694,575
United	2,278,213	1,810,613	306,290	. . . .	48,993	. . . .	28,312	12,550	1,930,357	1,081,916	848,441	347,856
TOTALS	136,088,157	77,330,513	38,173,012	5,388,099	10,449,490	1,058,307	1,982,472	874,003	126,375,565	60,183,179	66,192,389	9,712,592

* Includes $167,000 non-recurring U.S. mail pay due realized loss of $175,100 included in non-operating expense on DC-4 sold in April, 1949.
** Represents company's estimate of amount which should be received in accordance with the terms of the Civil Aeronautics Act when permanent rates are established. Estimate exceeds temporary rates in effect by:
Latin American Div. $5,642,650; Atlantic Div. $6,111,057; Pacific Div. $1,049,552; Alaska Div. $406,293

NOTE: Data in above tabulations were compiled by American Aviation Publications from reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for Braniff to South America; C & S to South America; Colonial to Bermuda; Eastern to Puerto Rico; National to Havana; Northwest to Orient, and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.

U. S. International Airline Traffic, Jan. - June

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	U. S. MAIL TON-MILES *	FOREIGN MAIL TON-MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
				%										
American	39,410	32,250,000	51,650,000	62.43	66,493	20,487	. . . .	620,791	4,190,765	6,997,490	59.99	1,121,367	1,063,818	99.81
Amer. O'Seas	40,510	83,871,000	140,572,000	59.65	814,907	128,890	2,184,339	. . . .	12,369,000	19,274,223	64.17	3,806,449	3,703,674	95.51
Braniff	6,091	12,047,000	33,198,000	36.28	8,763	2,365	. . . .	91,620	1,268,444	4,780,292	26.52	729,967	740,634	96.75
C & S	11,917	13,071,000	35,609,000	36.70	4,948	1,540	. . . .	149,693	1,508,883	4,271,660	35.30	718,488	733,090	98.00
Colonial	7,283	5,746,000	16,125,000	35.63	4,795	867	. . . .	43,055	666,824	2,369,829	28.11	367,018	374,243	97.86
Eastern	7,425	8,149,000	19,393,000	42.02	29,167	. . . .	. . . .	287,527	1,199,440	2,356,125	50.46	376,480	376,480	100.00
National	26,319	7,691,000	14,995,000	51.29	6,446	. . . .	198,178	. . . .	987,345	2,365,755	41.73	343,941	264,226	99.56
Northwest	17,811	35,677,000	69,868,000	51.06	974,136	93,425	49,550	2,085,594	7,167,579	11,612,833	61.72	2,905,028	2,891,926	99.20
Panagra	47,929	55,468,000	95,485,000	58.09	181,382	112,744	757,386	265,027	7,402,358	14,071,862	52.60	2,905,458	2,923,560	97.36
Pan American														
Latin Amer.	365,182	291,025,000	529,689,000	54.94	1,340,668	376,094	9,332,883	269,639	40,653,057	78,998,203	51.46	14,875,755	14,981,037	98.51
Atlantic	62,641	147,180,000	227,751,000	64.62	1,353,237	499,955	4,324,687	41,757	22,367,390	37,546,987	59.57	7,166,599	7,104,230	95.42
Pacific	42,325	121,873,000	189,822,000	64.20	2,660,856	404,644	2,693,093	. . . .	18,106,886	29,368,786	61.65	7,584,827	7,608,087	97.35
Alaska	17,128	17,849,000	35,796,000	49.86	203,745	. . . .	1,878,344	366	3,944,400	7,381,433	53.43	1,248,563	1,212,638	97.85
TWA	46,375	134,168,000	217,763,000	61.61	1,486,764	610,414	3,302,769	. . . .	20,214,307	31,216,251	64.75	6,541,866	6,294,735	99.68
United	13,345	32,072,000	49,411,000	64.90	394,894	. . . .	105,567	. . . .	3,837,831	5,390,792	71.18	1,162,585	1,154,558	100.00
TOTALS	751,691	998,137,000	1,727,127,000	57.79	9,531,201	2,451,425	24,826,796	3,855,069	145,884,509	258,002,521	56.54	51,854,351	51,426,936	97.86

* Includes air parcel post.

NOTE: Data in above tabulations were compiled by American Aviation Publications from monthly reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for Braniff to South America; C & S to South America; Colonial to Bermuda; Eastern to Puerto Rico; National to Havana; Northwest to Orient, and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.

U. S. Feeder Airline Traffic, Jan. - June

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
				%									
All American*	17,685	2,187,000	12,535,000	17.44	22,224	20,635	. . . .	256,645	1,185,463	21.64	1,132,365	1,222,757	92.47
Challenger	14,162	3,803,000	16,673,000	22.80	18,972	18,525	38,772	458,868	1,760,278	26.02	822,561	867,156	94.57
Empire	16,092	3,474,000	10,865,000	31.97	9,778	6,661	. . . .	348,172	828,280	42.02	517,013	534,196	96.44
Florida**	3,026	409,000	1,542,000	26.53	1,812	660	. . . .	41,827	168,979	24.75	193,120	192,970	99.47
Monarch	12,806	3,241,000	15,435,000	20.99	12,034	8,781	38,895	385,422	1,217,304	31.63	835,567	916,648	90.82
Piedmont	35,620	7,731,000	28,745,000	26.89	15,422	15,803	25,998	796,720	2,856,679	27.87	1,369,423	1,399,536	97.64
Pioneer	48,680	13,518,000	45,225,000	29.89	45,973	12,869	29,414	1,310,451	4,773,737	27.44	1,876,707	1,986,348	93.85
Robinson	19,079	2,811,000	7,944,000	35.38	8,000	. . . .	7,951	255,260	814,056	31.32	396,273	440,191	88.63
Southwest	54,007	9,939,000	25,139,000	39.53	24,135	15,591	48,289	1,084,752	2,534,069	42.77	1,197,031	1,210,968	98.09
Trans-Texas	18,821	4,618,000	27,487,000	16.80	31,003	8,530	5,193	478,562	2,262,058	21.13	1,308,900	1,351,326	96.81
West Coast	30,400	3,956,000	12,661,000	31.24	4,820	5,327	. . . .	366,026	1,176,160	31.12	602,907	624,714	96.15
Wis. Central	11,801	1,744,000	5,632,000	30.96	8,415	8,265	. . . .	173,228	565,929	30.61	669,944	794,555	84.25
TOTALS	282,179	57,431,000	209,883,000	27.36	202,588	121,647	194,512	5,955,933	20,142,992	29.56	10,921,811	11,541,365	94.26
						Helicopter Mail Service							
Los Angeles	. . . .	. . . .	. . . .	. . .	21,923	. . . .	. . . .	21,923	67,662	32.40	171,693	175,818	97.71

* Began passenger service March 7, 1949.
** Terminated operations at end of March, 1949 in accordance with CAB's decision not to renew airline's temporary route certificate.

WINGS OF YESTERDAY

25 Years Ago

The NAA announced that the trophy for light planes offered by Capt. E. V. Rickenbacker was to be competed for in annual contests, the first of which was held in connection with the Dayton Air Races in October, 1924.

•

The establishment of an air mail service between the U. S. and Central America was being carefully considered by authorities in Washington.

•

To meet the needs of commerical passenger carrying, the Ryan Flying Co. of San Diego, Calif. designed and built a new type cabin plane accommodating four passengers in the cabin, and the pilot in an open cockpit in the rear. The plane was powered with a 150 or 100 hp Hispano-Suiza motor.

10 Years Ago

(IN AMERICAN AVIATION)

Philip G. Johnson returned to Boeing Airplane Co. to become president after two years as executive vice president of Trans-Canada Air Lines where he had established the new transcontinental airline system. Johnson had been 'blacklisted' by the U. S. Government following the air mail cancellations of 1934.

•

Clifford W. Henderson, managing director, and Phil T. Henderson, business manager, announced their retirements after 12 years of managing the National Air Races.

•

Eastern Air Lines installed portable battery-powered radios in its fleet to bring passengers the latest news bulletins.

LETTERS

Norway for Tourists

To the Editor:

Having followed in your footsteps around most of Scandinavia in June, I was naturally delighted to read your article, "Potential Tourist Mecca—Norway's Arctic Regions."

Having been a travel agent in years gone by and having kept very closely in touch with the development of foreign travel over the last twenty-five years, I can certainly agree with you that the average travel agent and certainly the average American have no idea how much of interest there is to see in Scandinavia and how, nowadays, a comprehensive Scandinavian trip can be easily included with the typical "Cook's Grand Tour of Europe."

While I did not have time to make the entire trip by flying boat up to the North Cape, I had a very good taste of what you enjoyed when in the course of only one afternoon, I flew in the Sandringham from Oslo across the mountains to Bergen, down the beautiful coast to Stavanger, where immediate connections are made with the daily SAS DC-4 flight from London to Oslo.

Since you were so justifiably enthusiastic about your trip, and since your friends may ask you for further details, I thought you might be glad to know, if you are not already aware of the fact, that for those with only a few hours to spare in Oslo, there is available this "pocket edition" of this scenic trip which gives a quick, thrilling view of snow-capped mountans, magnificent fjords, island-dotted coastline, and typical southern farmlands.

A. H. MOSSMAN
Vice President
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BOOKS

THE EAGLE IN THE EGG, by Oliver LaFarge. Published by Houghton Mifflin Co., Boston, Mass. 320 pages. Price, $3.50.

The Eagle in the Egg is the story of the birth and growth of the Air Transport Command, forerunner of the Military Air Transport Service, which, at its peak in 1945, was the world's greatest airline.

LaFarge is well qualified to tell the story. A Pulitzer Prize winner and author of the best-seller "Laughing Boy" before the war, LaFarge took what he terms "a four-year course in aviation" as Historical Officer of the ATC, during which time he logged over 80,000 miles as a passenger on the ATC network and acquired a broad knowledge of the command's activities.

The book is primarily a history of the ATC, from its inception in December, 1941, to its war-time peak in the summer of 1945 when its planes were flying to virtually every corner of the earth. LaFarge, however, uses only the shell of the history, touching not too extensively on dates and places, and trying to capture the spirit and essence of the ATC by a series of incidents. He tells of the interesting development of the Alaskan Route to Moscow, and our troubles with the Russians during its development; the story of the airline to Sweden, in which ATC personnel flew in civilian clothes over the German troops in Norway, delivering supplies to the Swedes and picking up interned Americans on the way back.

He also tells of the abuse the ATC took from the combat men. "Allergic to Combat" and "Army of Terrified Civilians", they were called.

When he starts talking dates and places, the reading gets pretty heavy at times, but, as if he sensed the breaking point, LaFarge slides into one of his anecdotes just when the going gets toughest, and your interest is revived. For a tale of the ATC, the book is remarkably clear of statistics, although the author does occasionally indulge himself in figure-quoting. The book is a painless history and a well-written one.

AIRLINE RECORD, 1949, published by Roy R. Roadcap, 208 S. La Salle St., Chicago, Ill. 160 pp. of data. $7.50.

This new edition of AIRLINE RECORD, in addition to substantial revisions from last year, has been expanded in two principal ways that should increase its usefulness: (1) inclusion of a general review of the industry's progress, and (2) inclusion of all scheduled carriers as of last June.

An important feature is the extensive revisions of data for prior years which have been affected by CAB retroactive mail rate adjustments. The 1949 edition shows the effect of all mail rate decisions through June. This required complete revision of more than one-third of the company-years from 1945 through 1947 included in the first edition.

As an up-to-date compilation of revised airline earnings, this volume should prove quite valuable to financial houses and airline researchers.

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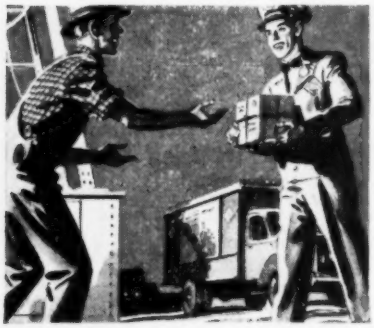

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TECHNICAL LITERATURE

Blast Cleaners: American Wheelabrator & Equipment Corp., Mishawaka, Ind., has published two bulletins, Nos. 114-A and 124-A, describing the two batch-type blast cleaning machines.

Standards Report: The National Bureau of Standards, U. S. Dept. of Commerce, Washington 25, D. C., has published a paper discussing "Frequency Monitoring Systems for Interval Timers, Technical Report 1370."

Chain Drives: Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill., has released a 36-page illustrated book, No. 2065, on Link-Belt Silent Chain Drives for Automotive and Industrial Engines. The book contains dimensions, center distances, pitch, horsepower tables, etc.

Parts Design: Climax Molybdenum Co., 500 Fifth Ave., New York City 18, N. Y., has released a 70-page booklet entitled "Three Keys to Satisfaction." The illustrated booklet discusses the relation between the design of parts and the choice of steel and its treatment. Copies available without charge.

Grading Equipment: Caterpillar Tractor Co., Peoria, Ill., has published a 16-page booklet entitled "Slope Stake to Final Grade with 'Caterpillar' Equipment." The presentation discusses machines for clearing, short haul work and initial cut performance. Applications of Caterpillar power units in shovels, compressors, rollers, force feeding loaders, etc., are also described.

Flight Research: G. M. Giannini & Co., Inc., 285 West Colorado St., Pasadena 1, Calif., has developed dual quick-reference pamphlets, one a high speed flight chart and the other a "Mach Number Functions" folder. The booklets are especially valuable for engineers engaged in high subsonic and supersonic research.

Silicone Greases: Dow Corning Corp., Midland, Mich., is circulating two publications covering Silicone greases as ball bearing lubricants. Silicone note No. D-5 gives properties, performance and uses of the heat stable and oxidation resistant silicone lubricants while note D-6 carries information on how to use DC-44 Silicone grease in bearings of electric motors.

Heat Treating: Surface Combustion Corp., Toledo 1, O., has published a new bulletin on "Gas Fired Air Heaters" and their applications containing the latest information on industrial heat-treating equipment. The bulletin, No. SC-143, may be obtained on request from the company.

Welding Accessories. General Electric Co., Schenectady 5, N. Y., has published a new 20-page catalog containing descriptions, specification and prices of more than 150 arc-welding accessories.

Actuator Data: Electric Engineering and Manufacturing Corp., 4612 W. Jefferson Blvd., Los Angeles, Calif., is offering a set of 36 electric actuator and electric motor design drawings and performance charts free of charge.

OBITUARY

Starr Nelson

Starr Nelson, 84, of Delta, Colo., oldest private flier in the United States, collapsed and died of a heart attack in Estes Park, Colo., on August 27 as he was receiving an award at the National Flying Farmers Convention.

Nelson received his pilot's license about 10 years ago.

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